Famlink

Bridging distance and building empathy between people with a time keeping wearable

Client
Hochschule fur Technik und Wirtschaft

Duration
6 months

Team
Personal Project

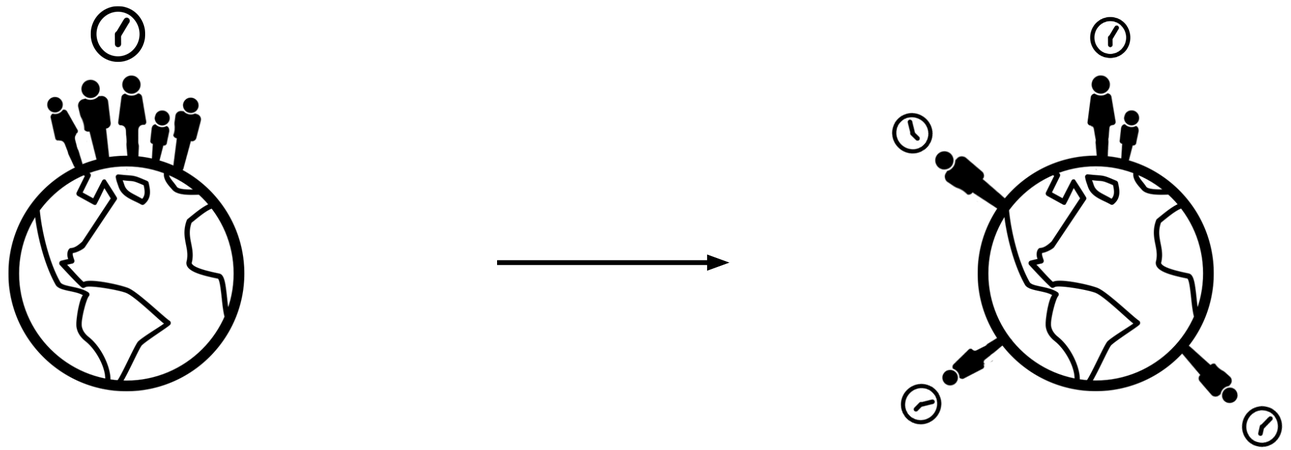
My Role
Design Research
Industrial Design
Interaction Design
UI Design

Actions
Planned 1 on 1 interviews
Organized stakeholder maps
Extracted insights from qualitative data
Designed questionnaires
Sketched concepts
Created 3D models
Rendered product images/animations
Planned application map
Built wire frames
Made low and high fidelity prototypes

View Prototype
https://www.figma.com/proto/zzYWX6CsWq08I2MKpkWt6V/Famlink?node-id=207%3A152&scaling=min-zoom

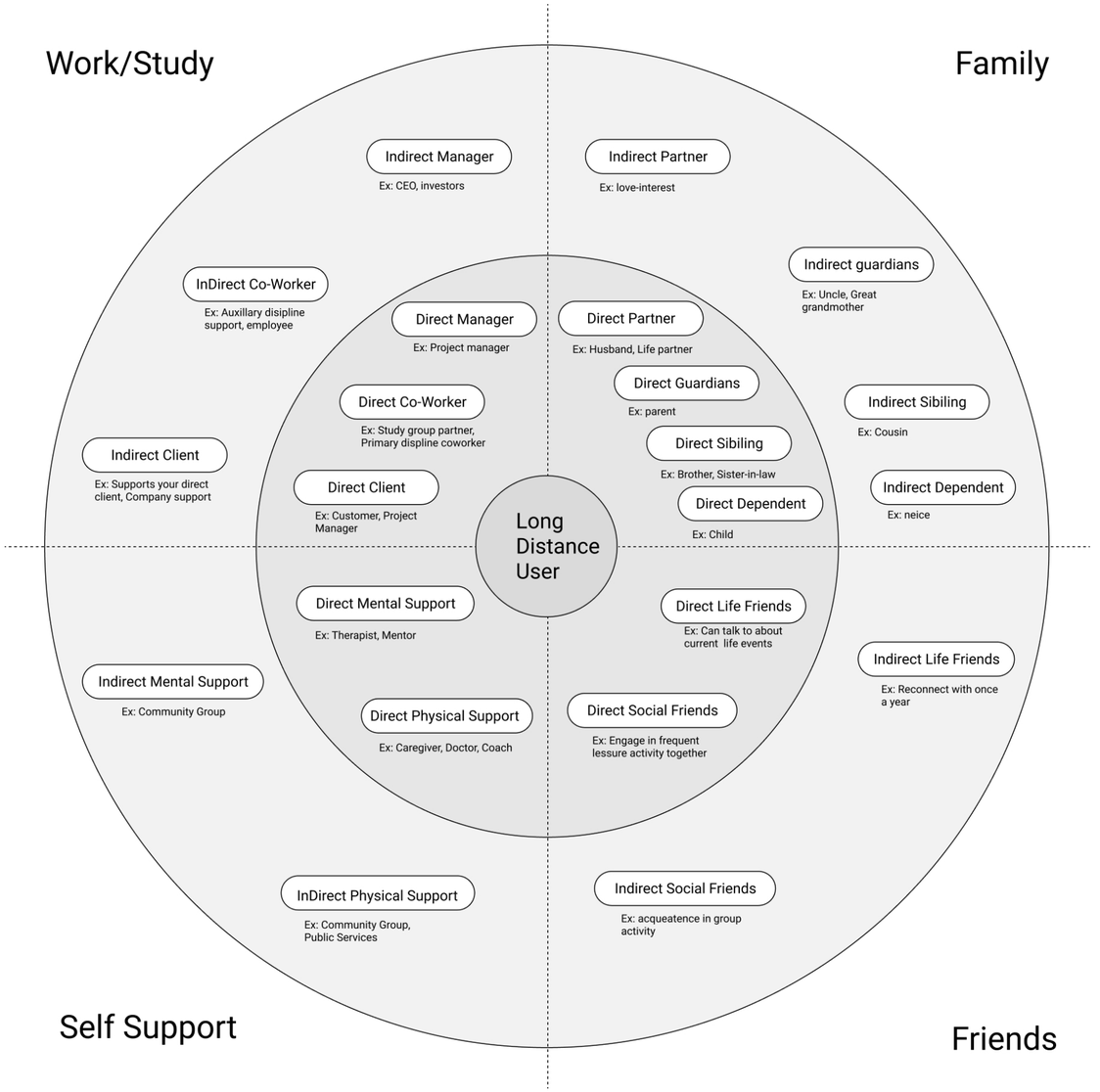
Problem

Today, we are living in a world where loved ones can easily work and live further apart. When living apart, It is hard to orient to each other’s time zones and schedules. How can a wearable experience solve this?



Stakeholder Evaluation

A problem space such as this would touch almost all types of users demographically. It is hard to define roles as everybody has different interchangeable roles in life. To focus interviews, I decided to center around the primary long distance user and their immediate family.



Primary User Interviews

I was able to conduct interview sessions with 4 international students who were actively dealing with long distance communication. A semi structured interview guide was built and I set up meetings with the main participants as well as included family or friends.

Interview guide

Introduction

A. Thank you for coming in today. I am creating a product that is trying to help orient people to one another. In this interview I am trying to get a better picture of your experience in having long distant relationships with friends and family. Your answers, along with others, will help guide me in building the right solution. As we go through questions I am not quizzing you. There are no right or wrong answers. I am simply trying to see things from your perspective.

B. With that said can you tell me a bit about yourself?

Open Discovery

A. Tell me about your experience being distant from people you know

B. Tell me about your experience being (insert title/job/experience here) and communicating with people you know from (place interview resides while distant)

A. Can you tell me about a situation where long distance communication with someone went awry?

User Activity

B. Can you describe how you are currently communicating with your loved ones?

1. What tools, software, hardware do you use to communicate? (smoke signal, carrier pigeon, ect.?)
2. Do you prefer this method?
3. Are there alternative methods?

C. Can you think back to a recent time of communication and take me through all of the steps you needed to complete to make it happen?

D. How often do you contact friends and family?

1. What times of day/night are you usually communicating with different people?
2. Can you tell me a bit about why those times specifically?

E How has communication changed from being close together to far apart, geographically?

a. What are some elements missing in long distance communication for you?

Conclusion

Is there anything else we did not get a chance to talk about that you think would be helpful information?

Thank you for coming in today! Your insights are going to be so helpful as this project progresses.

Interview mediums

1 on 1 in person

Whatsapp group chat

Facebook messenger group

Participants

4 international students	3 family members	1 flight attendant
23-36 years old	35-62 years old	30 years old

Interview Insights

From these conversations I was able to extract three actionable insights to center the solution around.

“It is frustrating doing the ‘time math’ in my head every time.”

Effortless readability

“I contact my loved ones through lots of social media. It’s sensory overload!”

Keep it simple and focus on the primary task

“Losing the physical connection was most difficult. It can’t be replaced as easy…”

Incorporate a sensory feature

Effortless Readability

How can a human read time effortlessly? We evolved to instinctively notice the behavior of the sun to tell time. However, sunrise and sunset can sometimes look similar. How do you distinguish between the two?

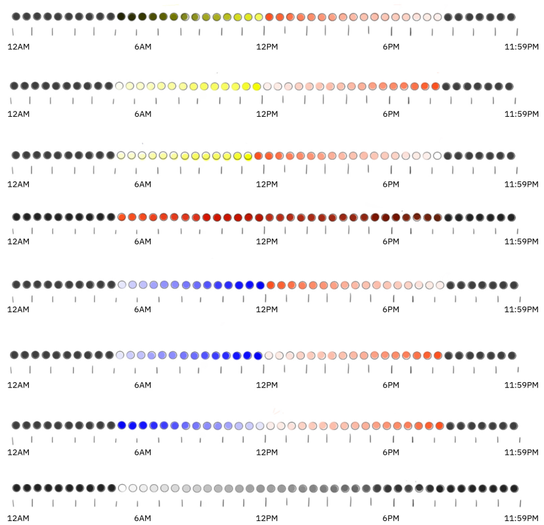
Survey - Interpreting Light as Time

To gain insight in how to best communicate time by light, I designed a survey for my interview participants to complete. Each participant answers a couple open ended questions. Then they needed to articulate a preferred communication method from color and light intensity.

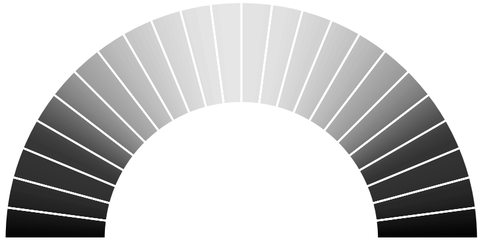
This surveys goal is to determine the best way to communicate the time of day through an LED light. This LED light would be held on a wearable and intended to represent a single person, group, or timezone.

How would you communicate the time of day to someone across the world without numbers or words?

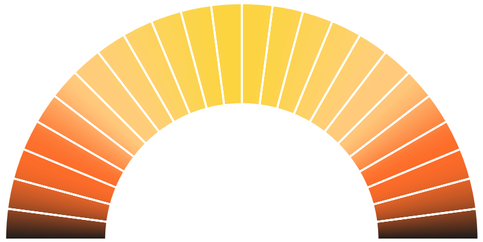
From the options below, What is the clearest interpretation of the time of day?
(Please select 1-2 with a reasoning at the bottom of the survey) Higher Color Saturation = Lower Brightness



Why?



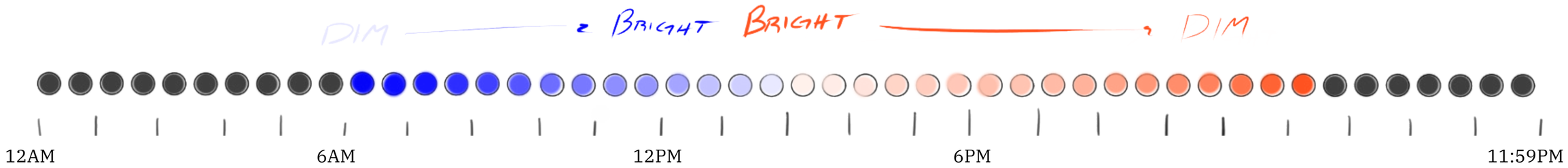
Brightness/Intensity



Color

Circadian Rhythm

From the survey results, participants mentioned following the circadian rhythm as inspiration. In addition, they chose breaking up the evening hours into two colors while scaling the light intensity with typical “alertness” in someones day. This would be customizable per user.



Cooler light mimics our daytime sky. It is associated with waking up

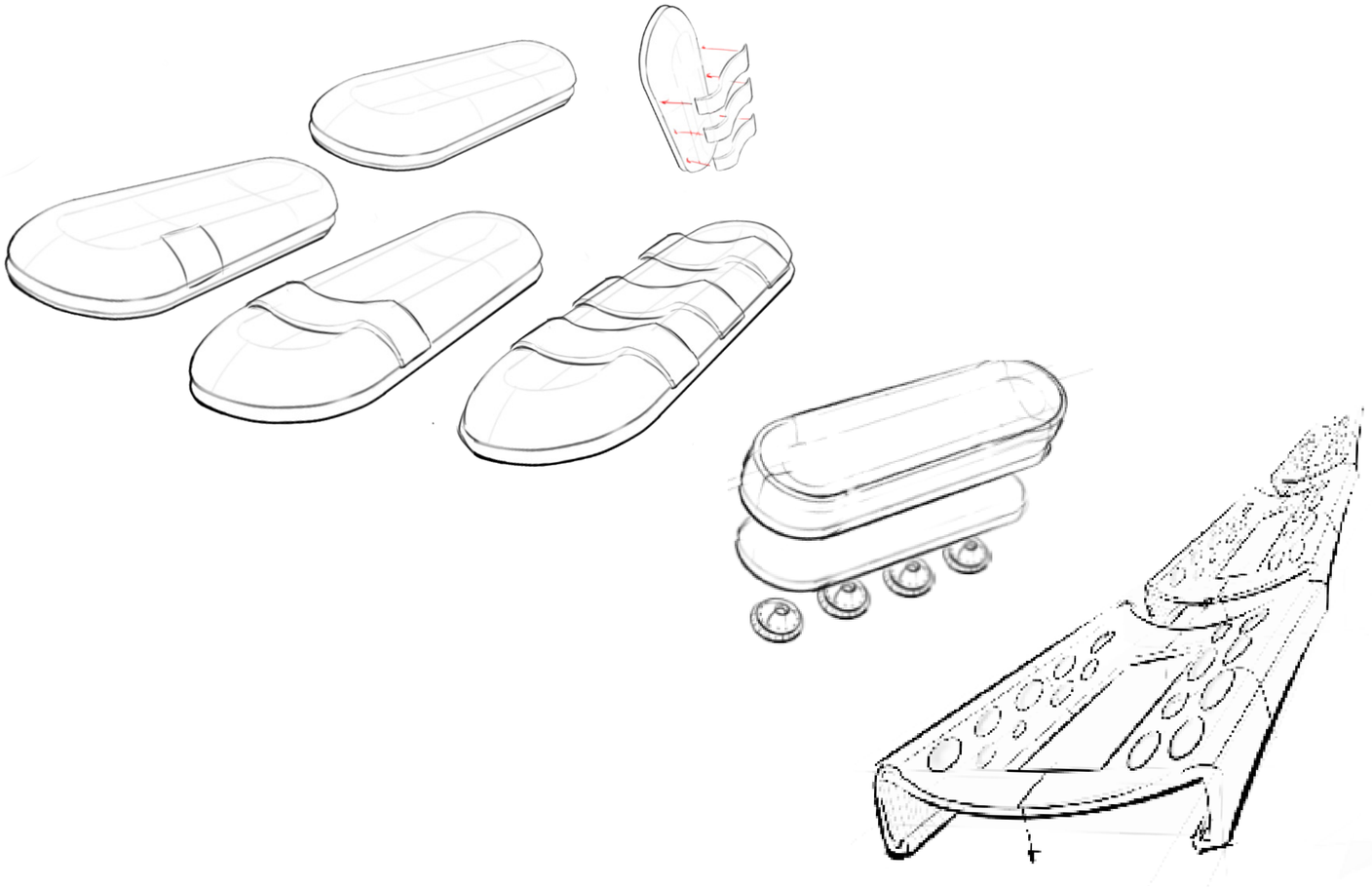
Warmer light induces melatonin. It is associated with going to sleep.

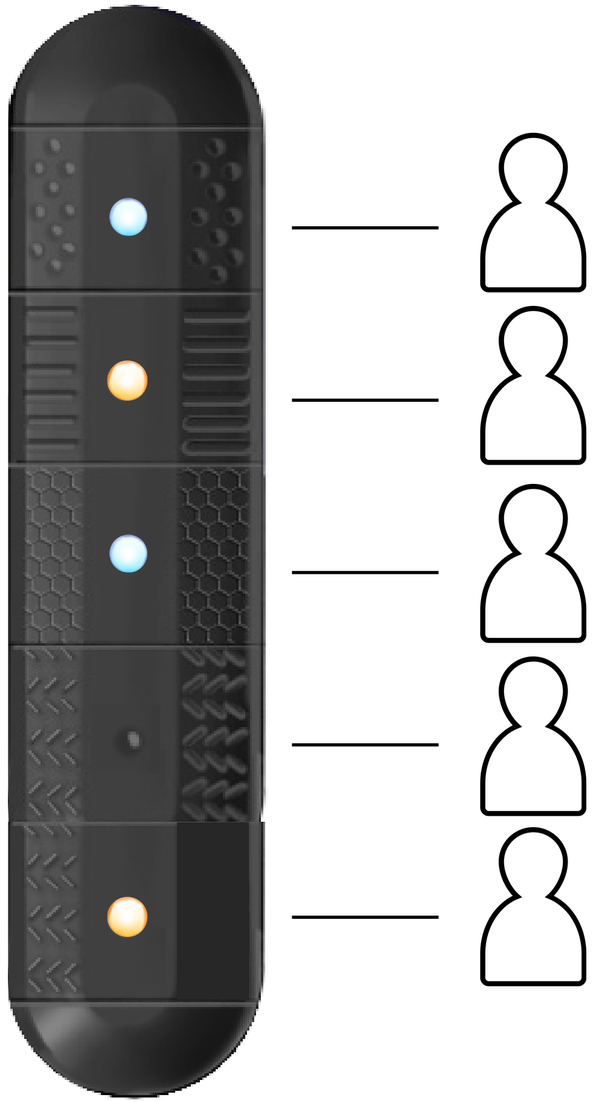
Wearable Form

After figuring out time communication, a wearable form needed to house the light information. A ring would be a nice solution but is too restrictive in size. The best form solution needs to be flexible in its use and appropriate for different wearable situations. A neutral item is also preferable for a wide demographic of users.

Identifying Users with Sensory Connection

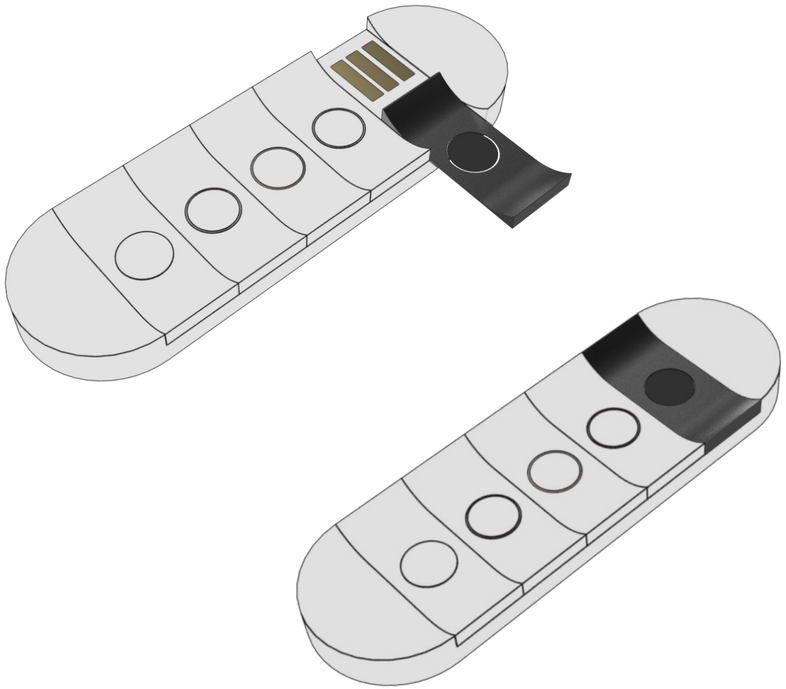
Each unit is divided up into user ID “Links”. To bring in the lost sense of physical touch, links will have certain textures, colors, and features representing your loved ones.



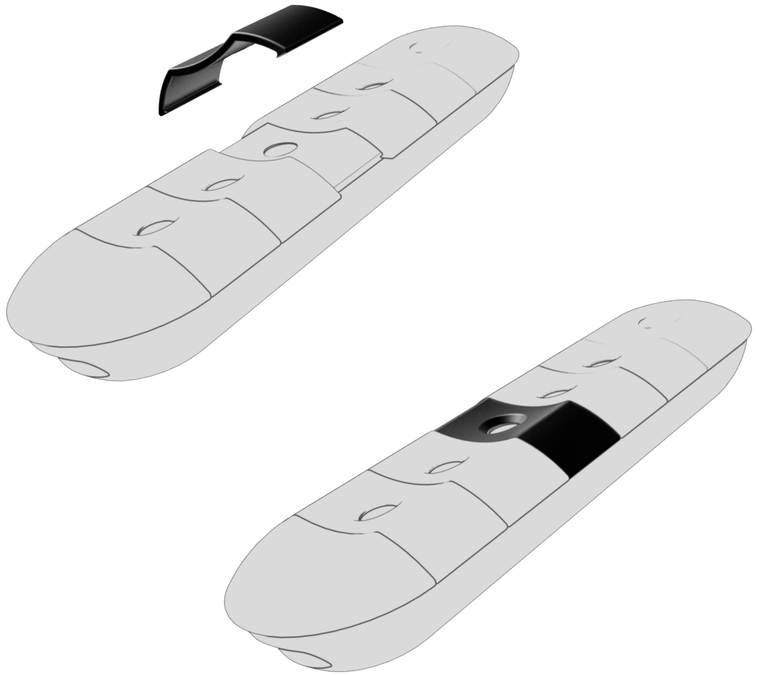


Link Form

The initial direction was to make the Links separate and connect them to the body. This is complicated and costly. A more practical idea is to encase electronics inside the main unit and make the links act as covers over each LED.



X LED encased in link and connected through plated contact



Plastic ID links snap onto corresponding LED which is encased in the unit.

Hardware Features

Keyring loops provide a versatile way of keeping Famlink with you. A provided keyring, wrist strap or necklace is available.

Button cell batteries avoid the burden of having to charge the unit.

Press-snap fit covers over LEDs to identify users.

An NFC antenna syncs Famlink to an application device to update and change link profiles.

One 2500k white micro LED and one 6500k white micro LED per Link profile.

A power toggle can turn Famlink’s LEDs on or off

Hardware as Accessories

Famlink could be worn as a necklace, hooked on to a backpack, clipped to a key chain, worn as a bracket, etc.

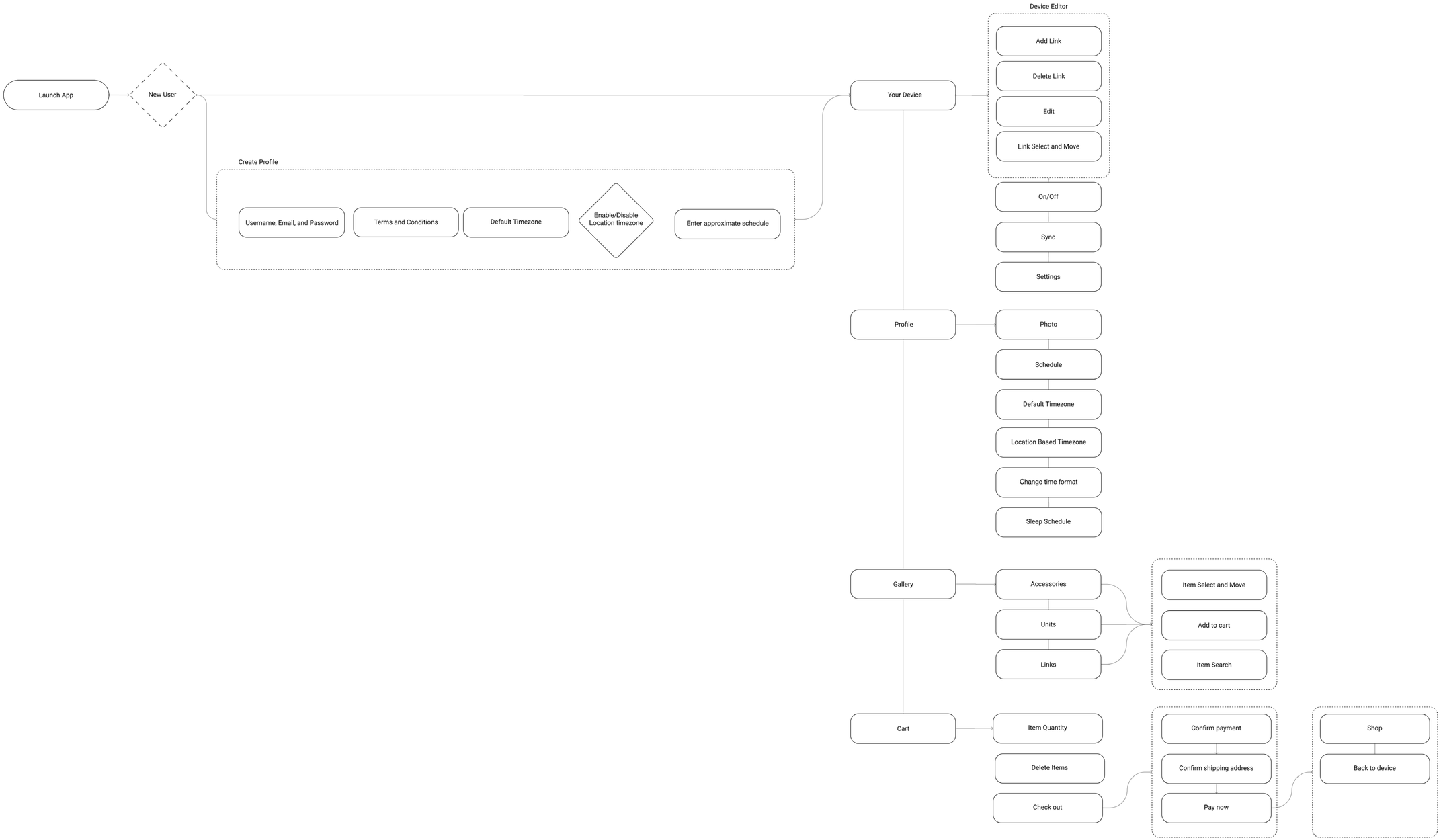
Companion App

To keep the hardware device simple, a companion app needed to be built to handle set-up and keep flexibility. This allowed the wearable to be dedicated to its primary task.

Major Criteria for Mobile Companion App

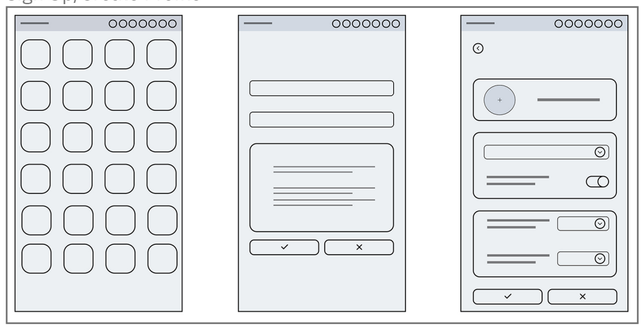
1. Device Editing/Control
2. User Profiles
3. Shopping experience

App Map

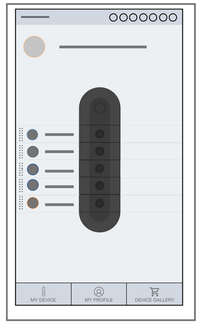

Launch App
New User
Create Profile
Username, Email, and Password
Terms and Conditions
Default Timezone
Enable/Disable Location timezone
Enter approximate schedule
Your Device
Device Editor
Add Link
Delete Link
Edit
Link Select and Move
On/Off
Sync
Settings
Profile
Photo
Schedule
Default Timezone
Location Based Timezone
Change time format
Sleep Schedule
Gallery
Accessories
Units
Links
Item Select and Move
Add to cart
Item Search
Cart
Item Quantity
Delete Items
Check out
Confirm payment
Confirm shipping address
Pay now
Shop
Back to device

Wire Frames

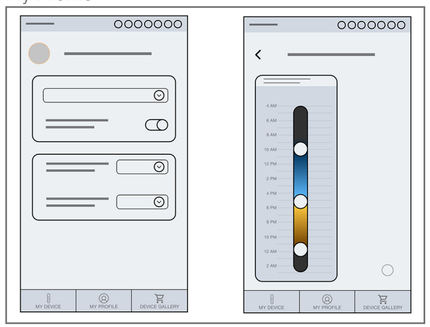
Sign Up/Create Profile



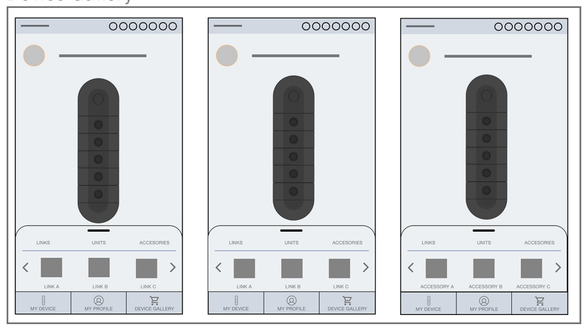
Your Device



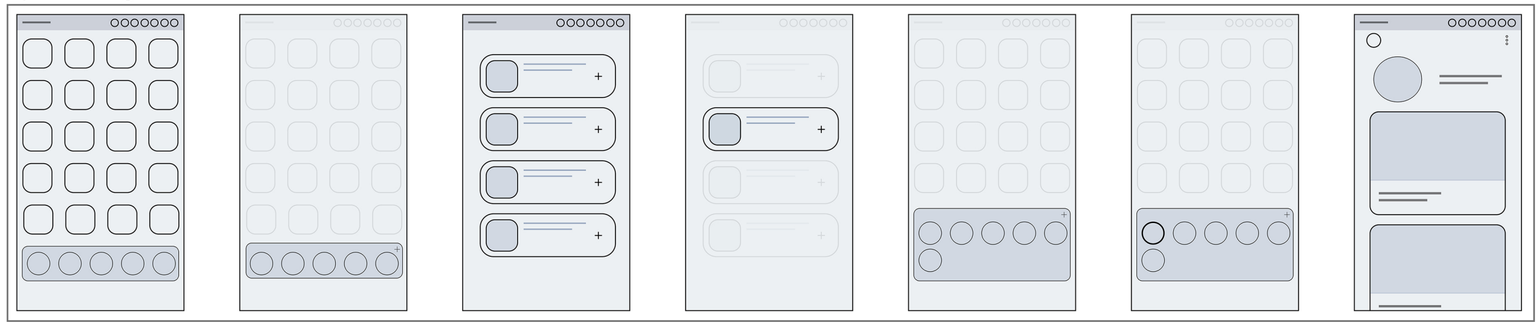
My Profile



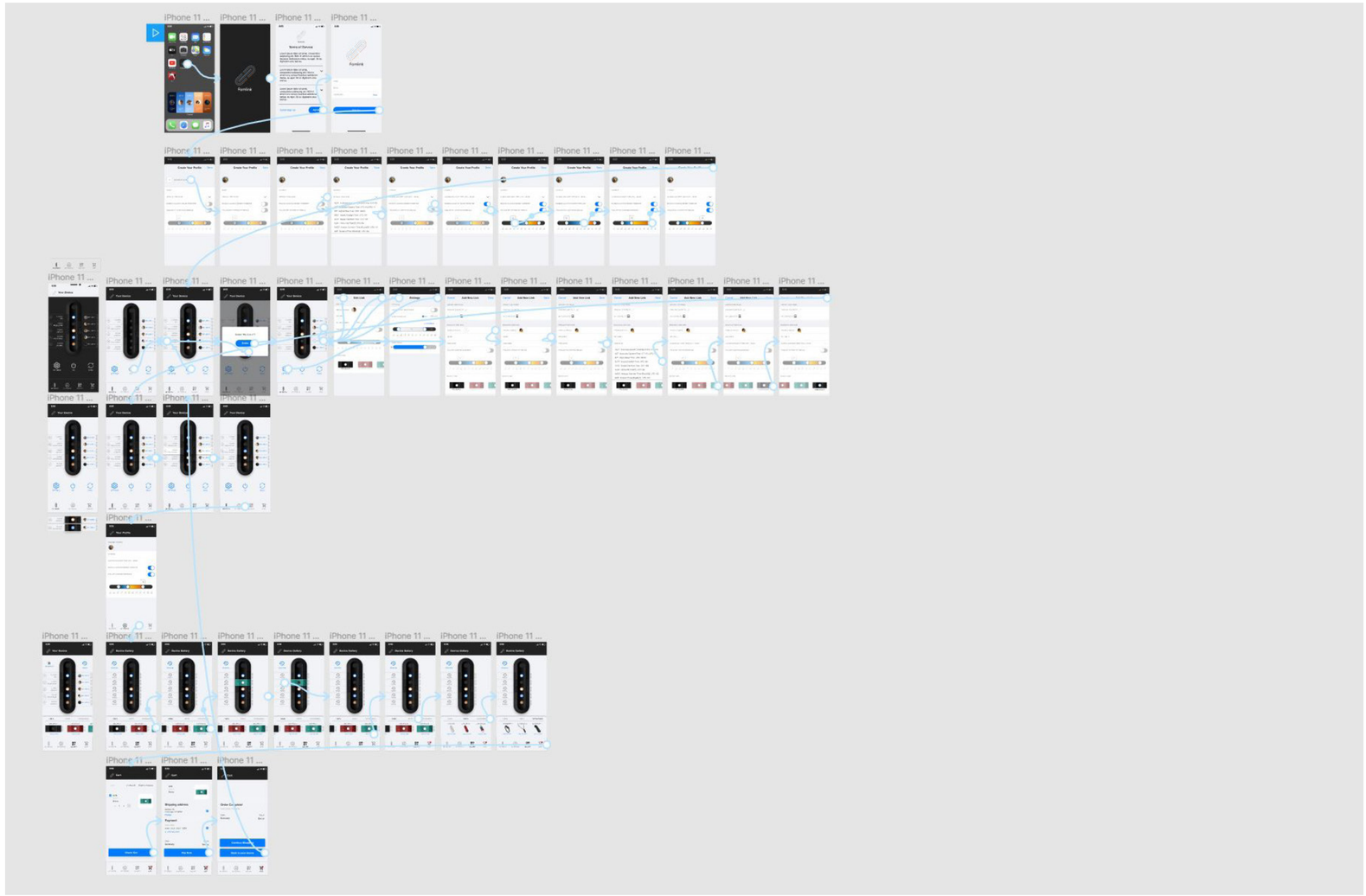
Device Gallery



Optional Widget



Prototype Creation in Figma



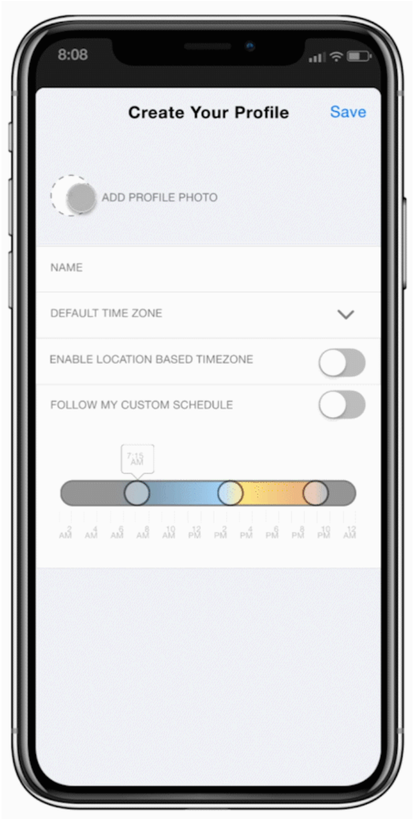
Prototype

Users can edit and program their device from the home screen. Digital links can house existing or custom user profiles. Famlink profiles input user's preferred schedules. Customizing your Famlink can be further explored in the device gallery.

To view the prototype visit this link https://www.figma.com/proto/zzYWX6CsWq08I2MKpkWt6V/Famlink?node-id=207%3A152&scaling=scale-down&page-id=0%3A1

Device Editing/Control

User Profiles



Shopping experience