

FLORA (Fluorescent Location Organizing Radio Accessory) Design Document



Concept Description

The FLORA is a location-aware watch that helps people locate others. The main advantages of using the watch are simplicity and quickness.

A watch's main purpose is to tell time. The watch has been a successful tool for a very long time. The main reasons for this are:

- a.) *Comfort* – a watch fits around the arm and is unobtrusive and lightweight.
- b.) *Availability* – since it is worn around the arm, it is always with the user.
- c.) *Luxury* – a watch is thought of as jewelry, instead of as a tool.
- d.) *Quickness* – a watch's data is laid out in an easily digestible format. Typically, a user can gain the necessary data just from a quick glance.

The FLORA attempts to maintain these four qualities. Since the FLORA's design is built upon a typical watch, the first three qualities are already built into the design. The fourth – *quickness*, is achieved through the use of colored light and simple text as a way to display location data.

Purpose/ Need

The FLORA's main purpose is to indicate where a person being tracked is located relative to the tracker. It uses a combination of colored light and text to display this information. It differs from other location-finding devices in that it does not use maps or contain topographical data. Its only purpose is to track another person.

The FLORA attempts to help people locate others quickly and unobtrusively. Past methods of finding people have been slow, unreliable, or confusing. These include:

Cell Phone – a recent technology that has made it relatively easy to find someone. A cell phone is portable by nature and almost always with a person. The drawbacks are speed and comfort. It can take up to thirty seconds for a call to initially connect. Once connected, users must rely on common points, or common sights to find each other. This can lead to human error. In addition, the phone must be held up to the ear at all times, which can cause discomfort during long sessions.

Pre-Defined Plans – Prior to cell phones, people agreed on a time and place to meet. The advantage to this method, is that since there was a prior conversation, the agreed upon spot is typically well known to both people. Unfortunately, people often think they know a location well, when in fact they do not. This leads to people getting lost, or one person waiting around a long time for another. In addition, there is no data available on where the person is, until they reach the spot. People are left “waiting in the dark”.

The FLORA attempts to solve the problems above by providing continuous feedback of both the location and distance of the other person. The connection time is instant, although choosing which person to track may take some time. Ideally, this time will be minimized through intuitive design and intelligence built in to the FLORA. Since the FLORA relies on objective location data, human error is all but eliminated.

Audience

The FLORA works best when it is used to locate other people within a small vicinity. The FLORA will typically be used in malls, stadiums, concerts, parks, or any other area where the two users are within walking distance of each other.



If two people are not within walking distance, then other methods should be used to coordinate meetups. The FLORA is best used in conjunction with an initial phone call or pre-defined plan. Once the people are within the general vicinity, they should set their FLORA to track the other person.

The FLORA is meant to track only one person at a time, although it should be easy to switch between different people rather quickly. This was intentionally done, based on beginning assumptions and research. Typically, people are looking for one person, whether that person is alone or the “head” of the group. If a group of three or more people are trying to meet up, then it should not matter as long as each person is tracking one other person. Eventually, the group will all meet. This assumes that an initial location was agreed upon by the group as a whole. An initial agreed upon location (or general vicinity) is always preferable no matter how large or small the group is.

Design Layout and Interaction

For Flash demo of the FLORA click [here](#).

There are three inputs on the FLORA.

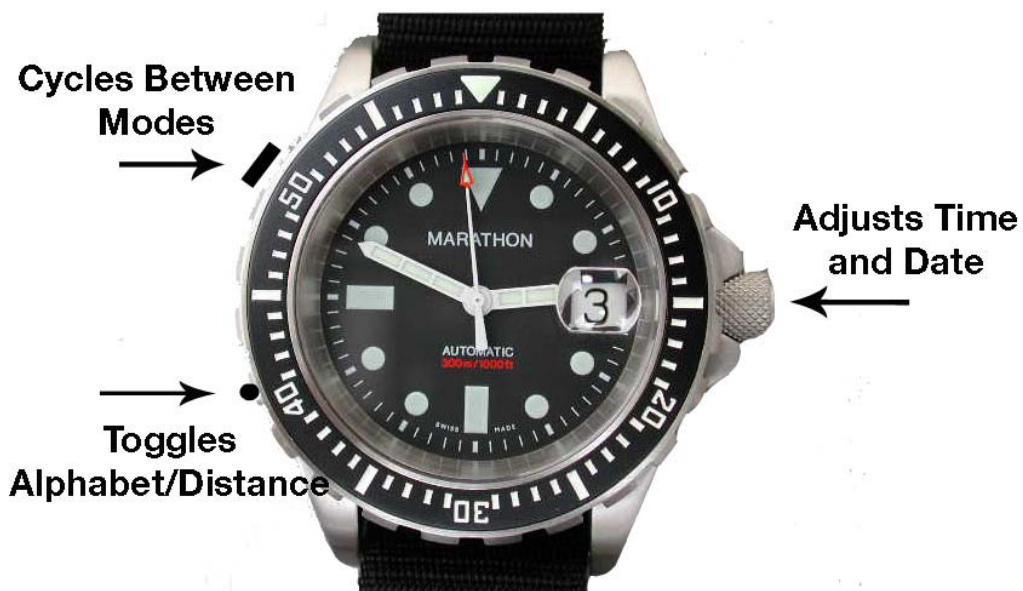
On the right is the watch dial. It functions like a typical watch dial and is used to adjust the time and date.

On the upper-left side is the mode button. This cycles between the three modes – *Watch, Buddy, Track*.

On the lower-left side is a switch that toggles between alphabet and distance for *Buddy mode*.

The FLORA has three modes of operation. These are:

Watch mode – in this mode, the FLORA is like any other watch. It will display time and date.



Buddy mode – this mode is used to select which buddy to track. When activated, the FLORA will dim the watch features and display the name of the closest buddy to you.



The face of the FLORA spins clockwise and counter-clockwise. This is used to select which buddy to track. As you spin the face, the buddies will go up or down on the screen according to the direction spun.

If the bottom-left toggle is set to Alphabet, letters will light up around the face. By turning the face, you can choose the buddy you would like to track. The alphabet is spaced according to the number of buddies you have by name. Letters with more buddies will be given more space on the face.

If the toggle is set to Distance, numbers will light up around the face. You buddies will be arranged according to how close they are to you. This is an easy way to see who is nearby. In this example, most buddies are located greater than 5000 feet away.



- 1.) *Track mode* - Once the buddy is selected, the face will change to red and green with green indicating the direction of the buddy being tracked. The buddy's distance will be displayed in feet. If the buddy is higher or lower in elevation (ex. Different floor in mall) a direction arrow will indicate which direction the buddy is (up or down).

**Green Indicates
Direction of Buddy**



When the buddy is within 50 feet, the face will start to blink to alert the user that the buddy is near. Within 25 feet it will blink faster and within 10 feet it will blink even faster.

User Research

User research for the FLORA was conducted by on-site interviews at a mall and by phone conversations. Additional research was found online.

Questions and Answers:

- 1.) How do you meet up with people?
 - by cell phone
 - plans made at school
 - leave from school together
 - always go to mall
 - instant messenger
 - wife makes plans, I obey

- 2.) How many people do you hang out with?
 - usually groups of 3 – 5
 - just my wife
 - sometimes one other couple
 - depends on what I am doing

- 3.) Do you wear a watch?
 - younger people interviewed do not wear a watch
 - younger people rely on cell phone to tell time
 - most people above the age of 25 wear a watch

- 4.) Why do you wear a watch?
 - to tell time
 - as jewelry
 - always have. It is a part of me

- 5.) Have you used GPS?
 - Almost everyone knew what GPS was, but had not used it
 - 1 person had GPS in cell phone, but did not know it
 - 1 person used GPS in car and liked it very much

- 6.) Would it be useful to track people?
 - most people interviewed thought it would be very helpful
 - some thought it was kind of creepy and wanted reassurances that it could not be abused
 - most people thought it would be sufficient to only track one person at a time, although some people wanted to track multiple people at once.

Additional Research:

Ambient Devices

<http://www.ambientdevices.com/cat/index.html>

Microsoft SPOT Watch

<http://direct.msn.com/>

Magellan GPS

<http://www.magellangps.com/en/>

Fossil PDA Watch

<http://www.fossil.com/>

Suunto

<http://www.suunto.com/suunto/main/index.jsp>