

Project Design Specification

February 13, 2008

Team Members: Alice Tang, Vidhya Raju, Alison Boumeester, Anika Lohrentz

Problem Statement:

Currently, visually impaired individuals rely on speaking watches, or tactile analog watches that must be carefully examined to tell time. These technologies can be disruptively noisy or prone to misreading. Our goal is to create a digital Braille watch that displays military time, does not cause disruptions to others, and is robust. The Braille display must be appropriately sized so the user can accurately and reliably distinguish between the different digits displayed.

Client Requirements:

- Digital military time watch
- Wristwatch or pocket watch size
- Silent
- Time displayed in Braille

1. Physical and Operational Characteristics

- Performance requirements:* The watch must not make any audible sounds.
- Safety:* The watch must contain non-toxic materials. Wires must not be exposed.
- Accuracy and Reliability:* The device must incorporate a counter to tell time within one minute of accuracy.
- Life in Service:* Must have a life-span of 10 years.
- Shelf Life:* Dry environment between -30 to 50 degrees Celsius.
- Operating Environment:* The device will be used daily. Therefore, it must be able to withstand abrasion, water, and other types of weather such as humidity and temperature.
- Ergonomics:* Cannot shock the user. May be worn as a wristwatch or carried as a pocket watch.
- Size:* Small enough to fit into a pocket (2 inches x 2 inches x 1 inch).
- Weight:* Within 0.2 kilograms.
- Materials:* Non-toxic materials.
- Aesthetics, Appearance, and Finish:* Sleek, streamlined.

2. Production Characteristics

a. *Quantity*: One.

b. *Target Product Cost*: To be determined, based on final design and long term plan.

3. Miscellaneous

a. *Standards and Specifications*: The client has a patent pending.

b. *Customer*: The client would like to physically feel the time using Braille. A power-saving function is preferable. Flip cover to protect from environmental damage.

c. *Patient-related concerns*: Criterion listed above must be met for patient comfort.

d. *Competition*: There are watches available commercially for visually impaired people: audible watches and analog Braille watches.