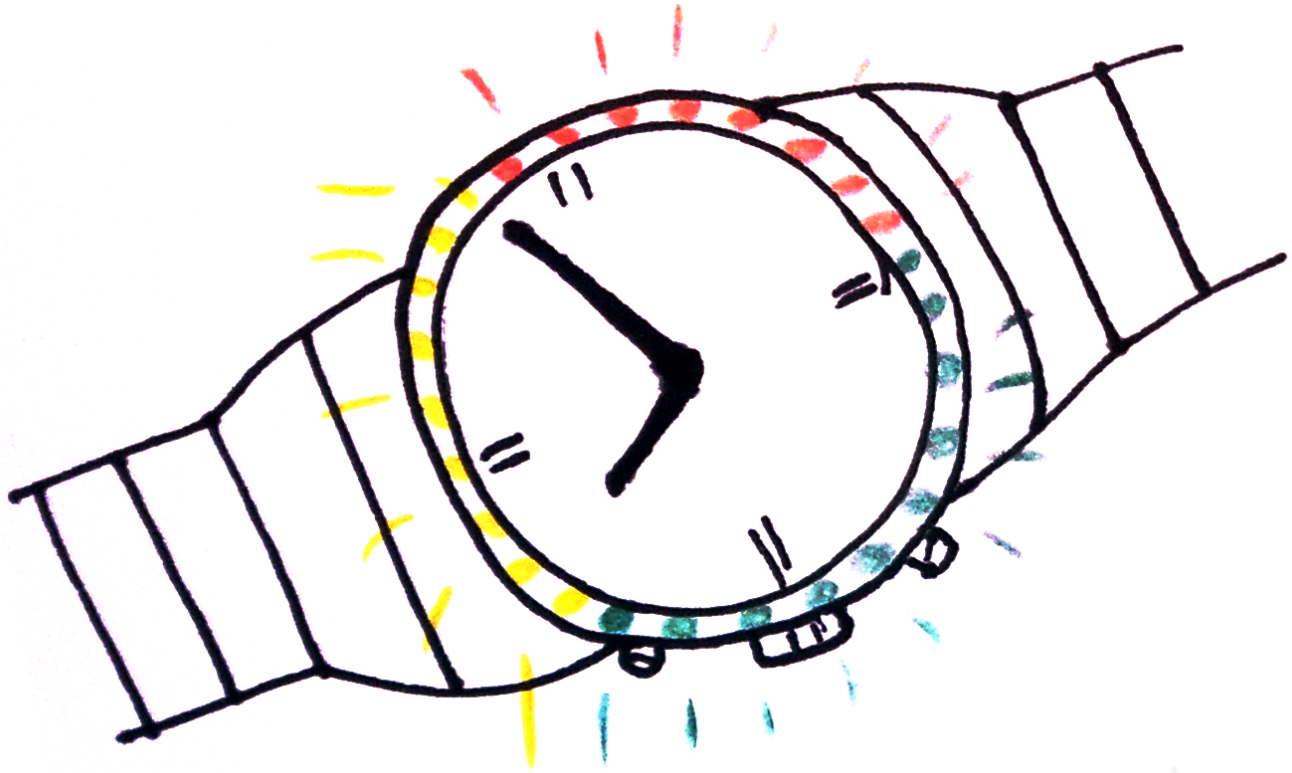
404 — Bengt Lüers, Marius Wybrands

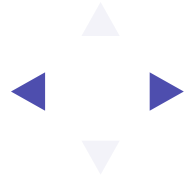
LightWatch



A wearable light display for body stress.

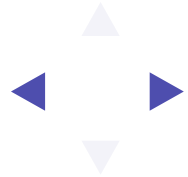
Task

- extend a watch to an interactive light display
- user input for setting the stress
- rgb LEDs for visualizing the stress



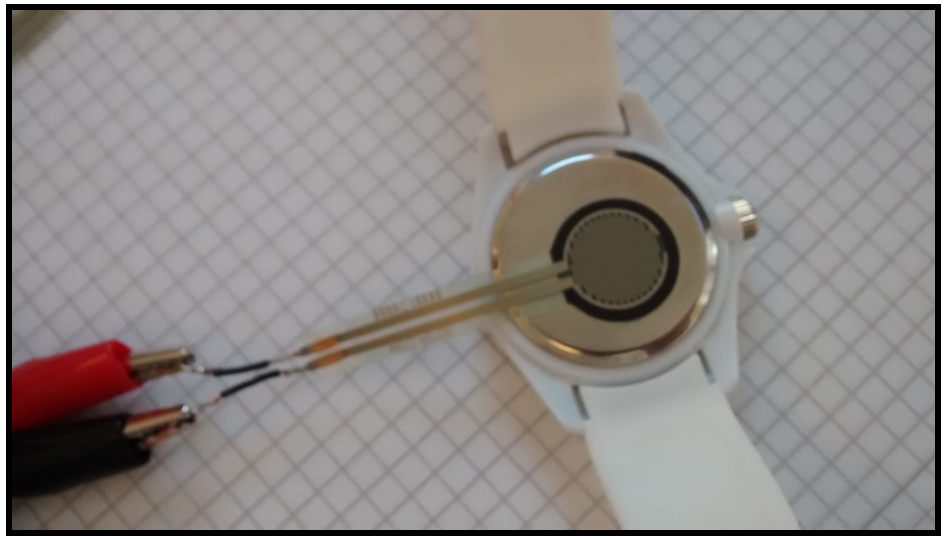
Approach

- Evaluate more user input modalities



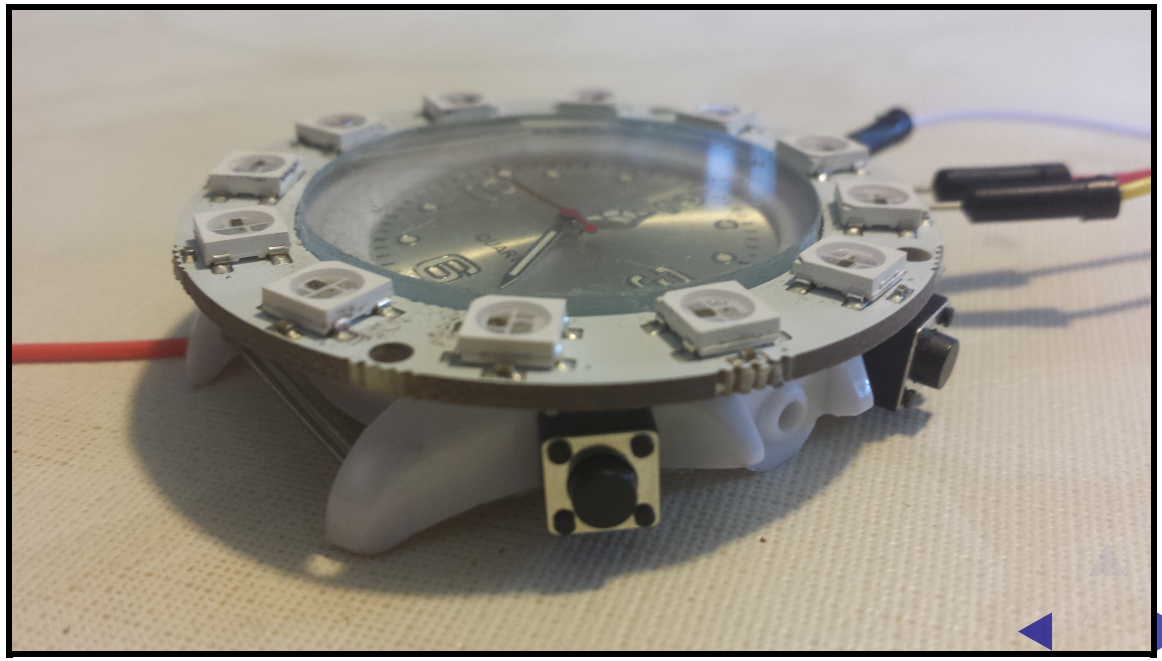
Evaluation: Pressure Sensor

- method: tested using logging program
- feasibility: bad, values not meaningful
- verdict: abandoned, because of unreliable input detection



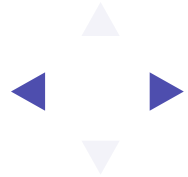
Evaluation: 2-Buttons

- method: tested using logging program
- feasibility: boring, but works
- verdict: kept, because of reliability



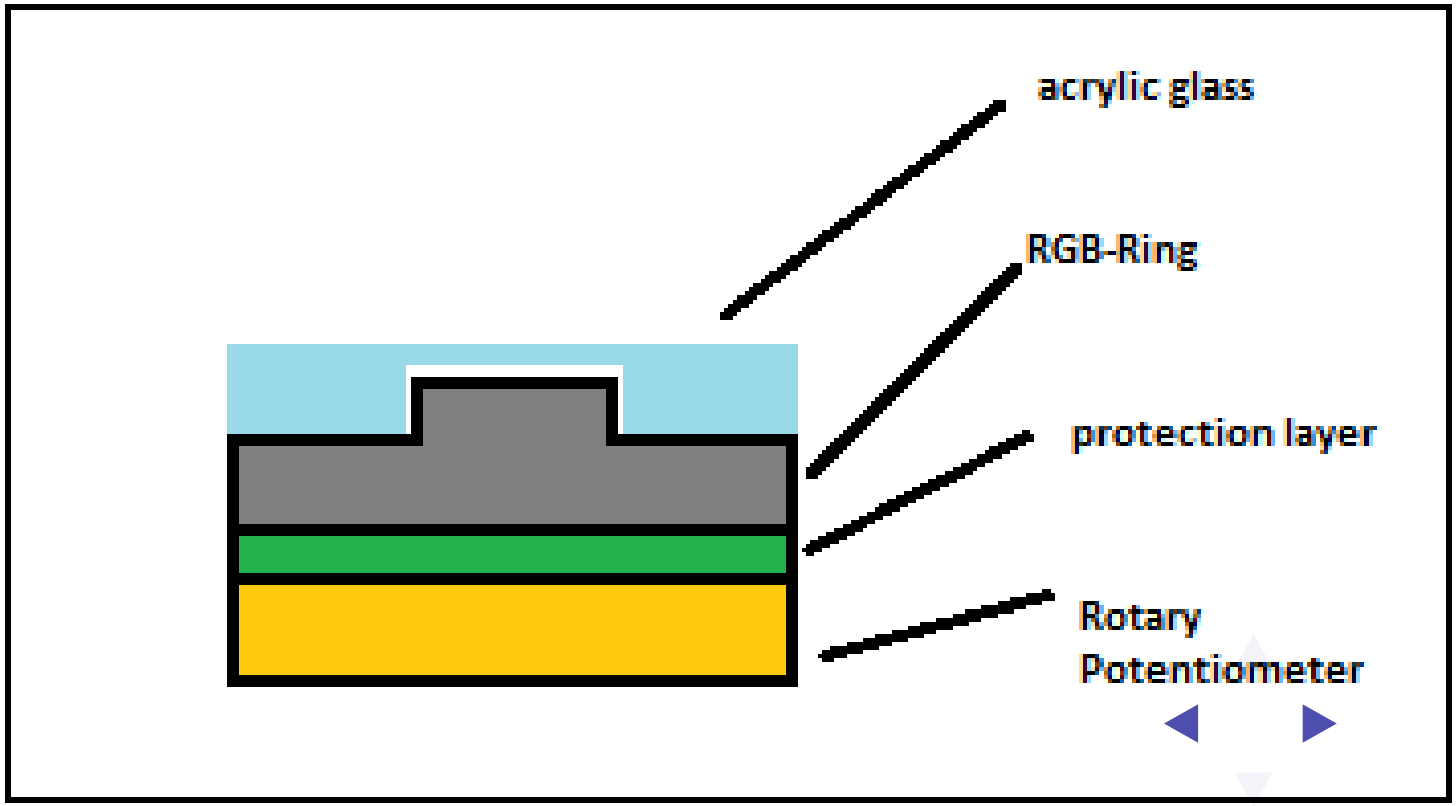
Evaluation: Potentiometer

- method: internet research
- feasibility: unknown, needs to be tested with actual hardware
- verdict: abandoned, because there is no more time



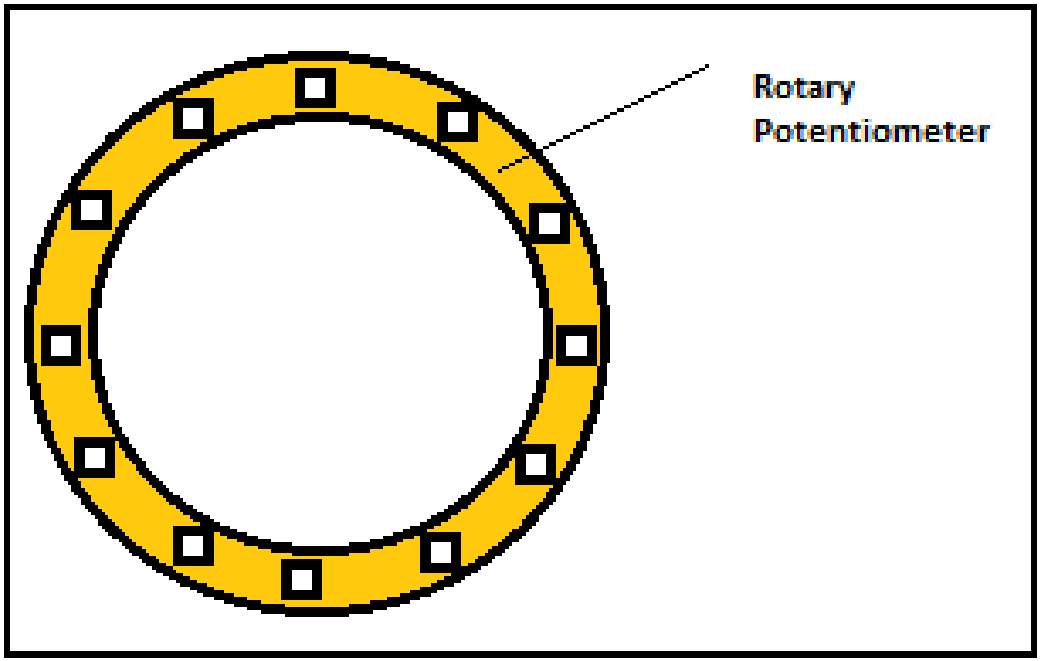
Potentiometer: Variant 0

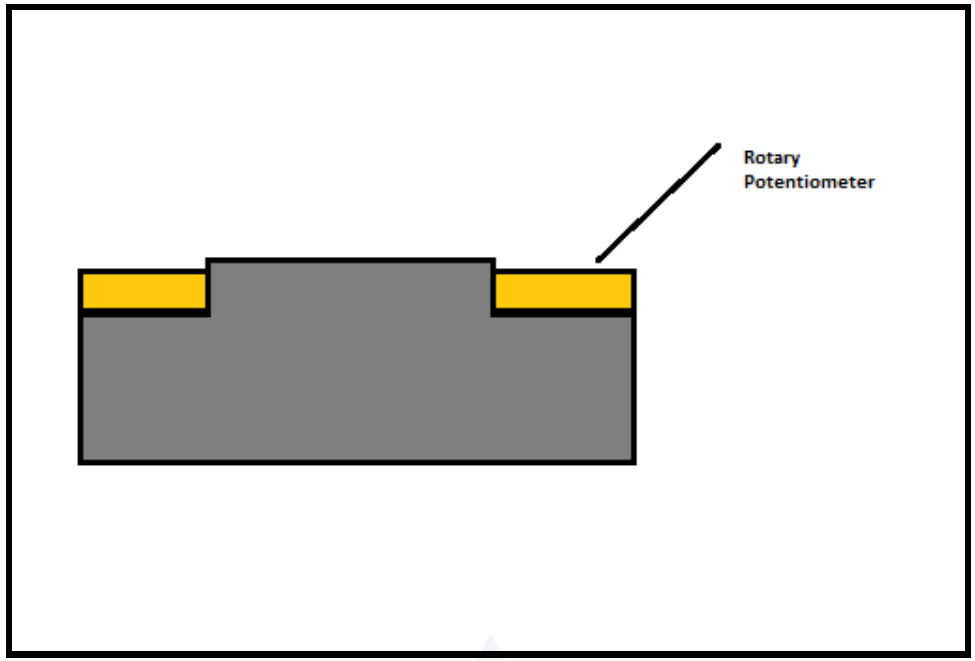
- potentiometer beneath the rgb ring
- flexible layer enables applying pressure



Potentiometer: Variant 1

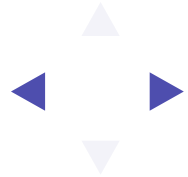
- potentiometer ontop of the LED ring
- cutouts for the LEDs





Evaluation: Minimizing the Arduino

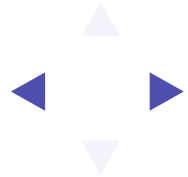
- problem: the arduino needs to fit into the
- method: internet research, breadboard prototype
- idea: use a ATtiny as a small Arduino replacement
- verdict: the circuitry will fit into the watch



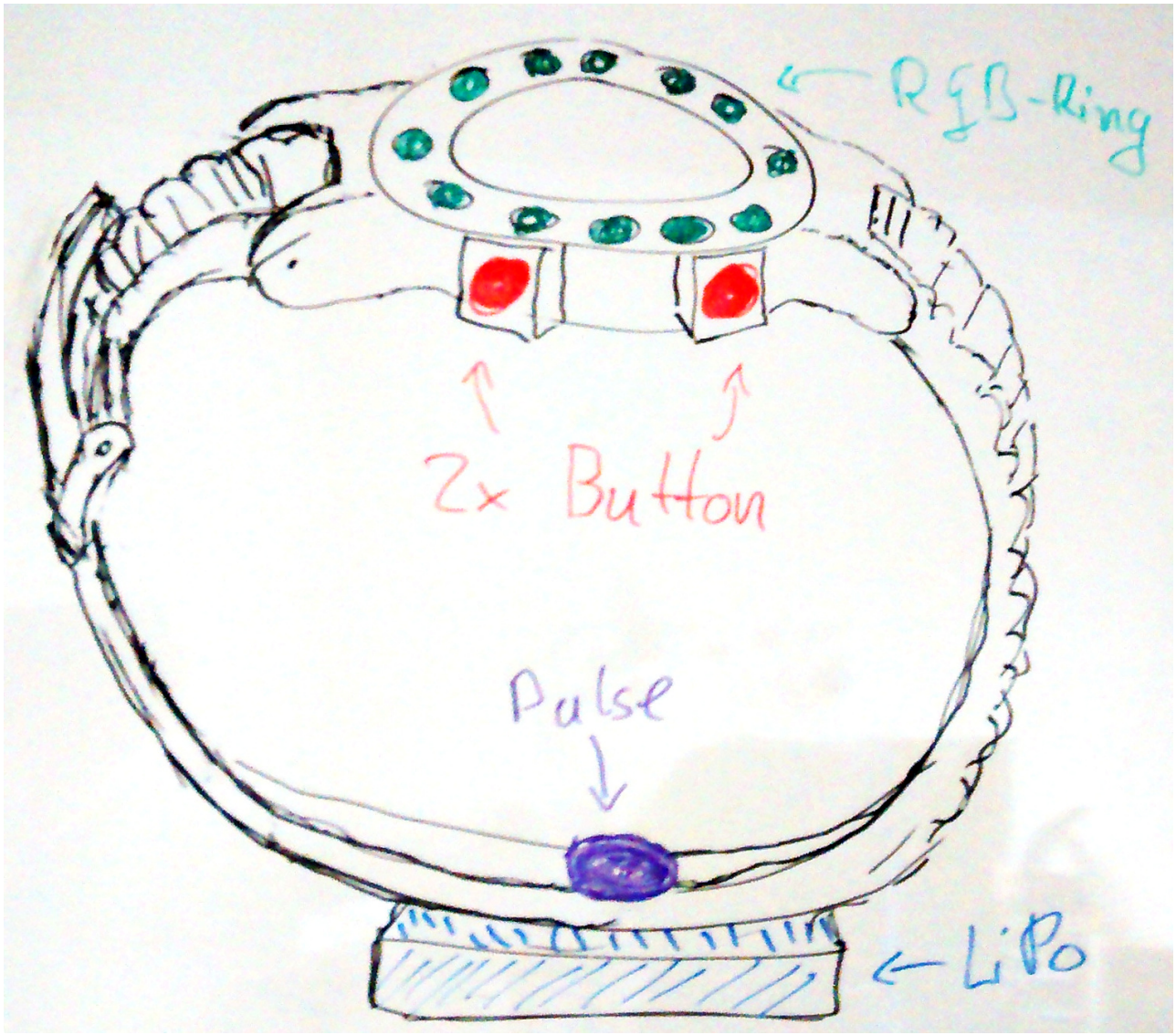
Evaluation: Power Supply

- method: work with watches
- idea: move lock to side, put battery on opposing side of the watch
- verdict: seems feasible

abandoned:



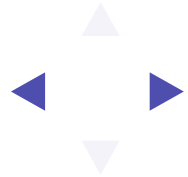
Hardware Concept



- 500 mA LiPo
- ATtiny85
- Pulse Sensor
- 2 Push Buttons
- RGB-Ring

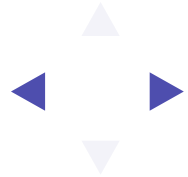
Interaction Concept

- output: system measures pulse, displays guessed stress
- interaction: user corrects visualization to felt stress



Outlook

- combine component prototypes into initial system prototype
- comprehensive software prototpe



The End