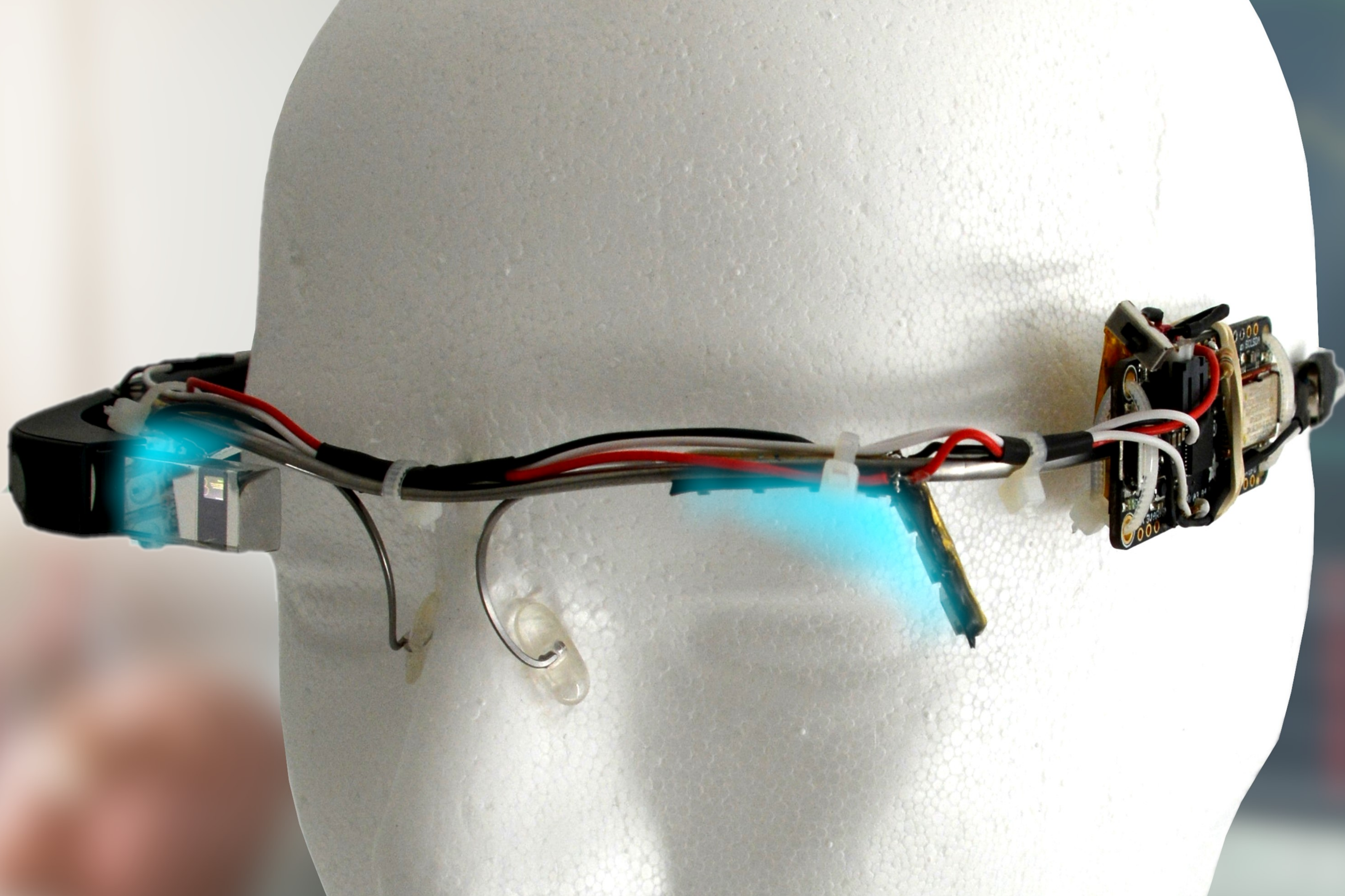




Glass++

Evaluating Multimodal Alarms on Google Glass

Vanessa Cobus¹, Steffen Busse², Wilko Heuten¹

¹OFFIS – Institute for IT

²University of Oldenburg

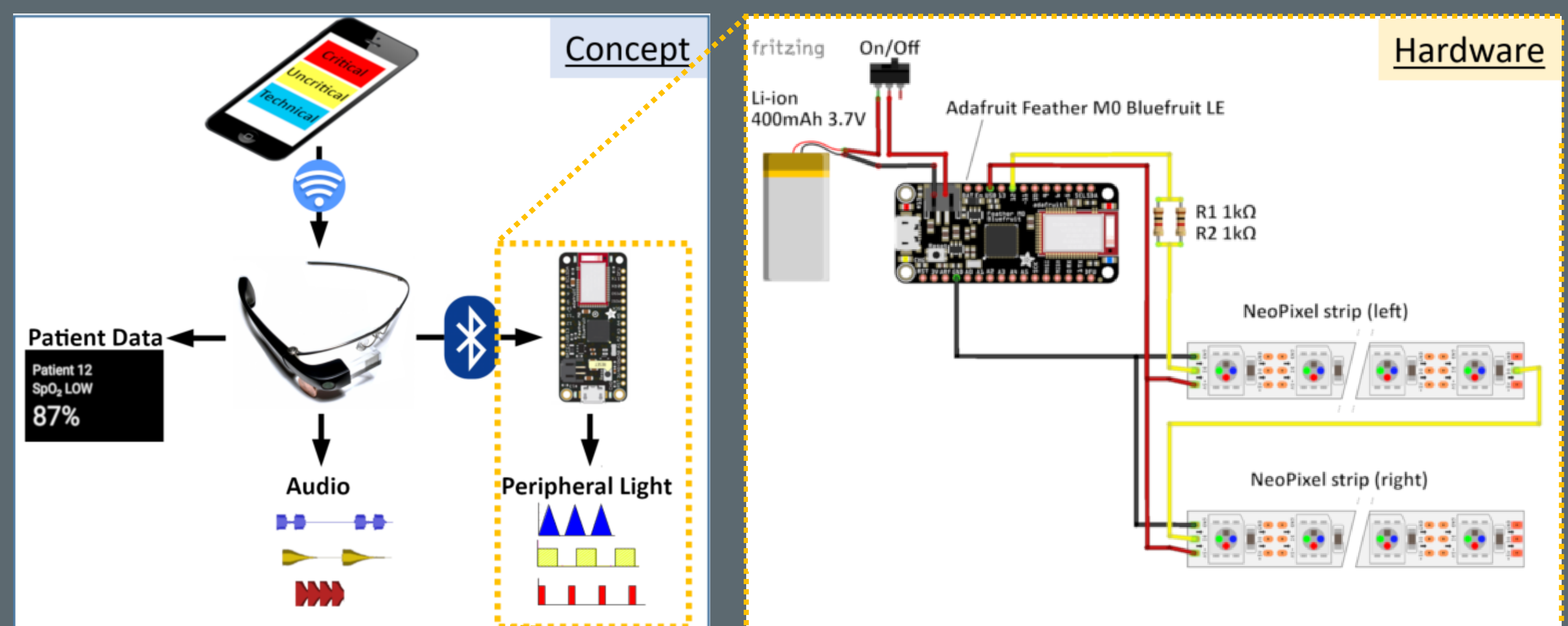
Motivation



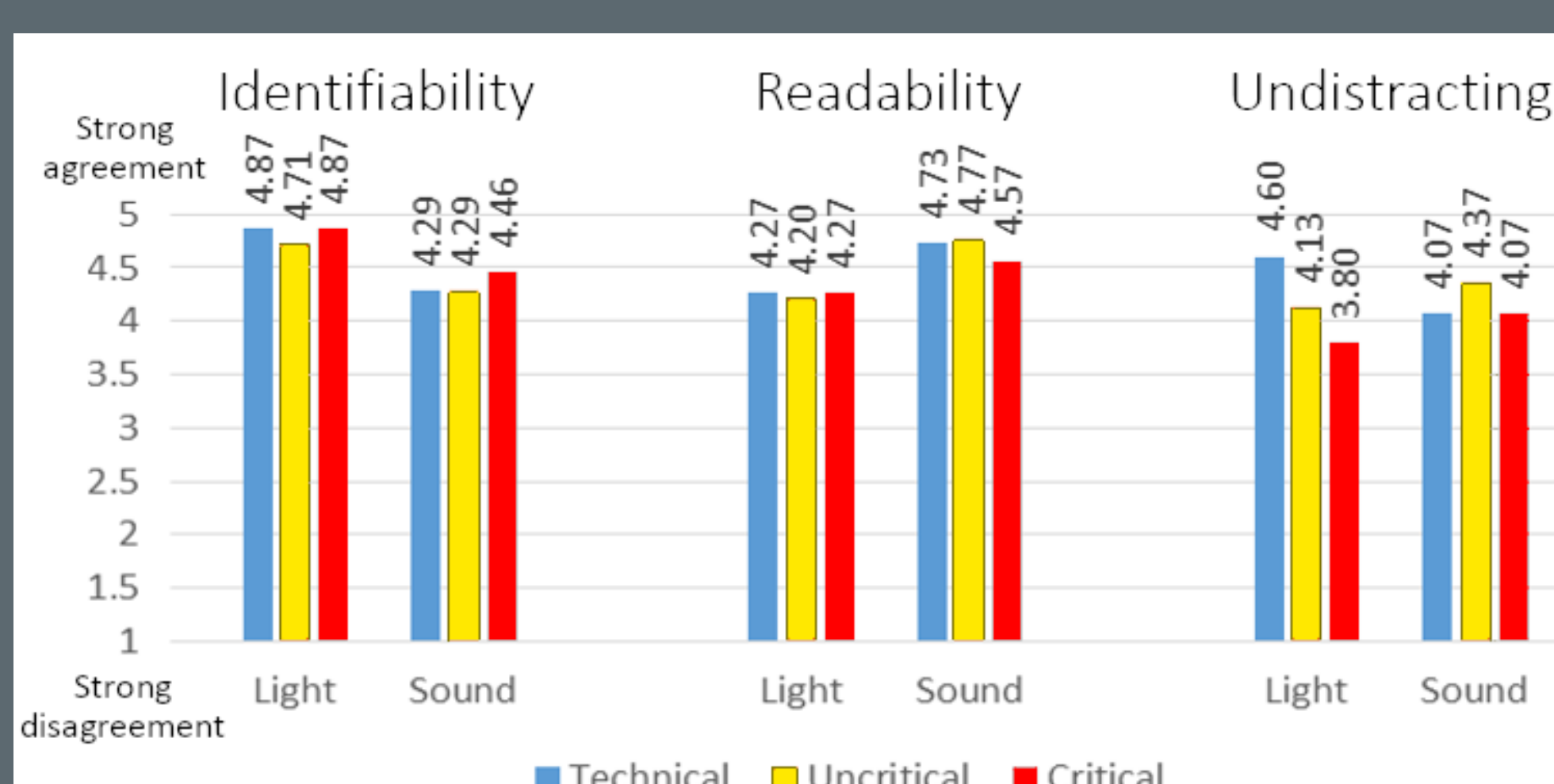
- > On intensive care units (ICU), patient monitoring systems cause up to 350 alarms per patient a day, audible for every person.
- > The large number of alarms leads to a continuously exceeded noise peak and furthermore a desensitization of caregivers (alarm fatigue).
- > A personal alarm distribution system is a promising approach to reduce the alarm load on ICUs.
- > Using a head-mounted display, patient alarms and relevant information could be forwarded directly to the responsible nurse.

Implementation

- > *Google Glass* was enhanced with an Adafruit microcontroller board and LEDs.
- > Three alarm urgency levels (technical, critical, uncritical) are represented with peripherally visual and audible cues.
- > The alarm source and relevant information will be shown on the near-eye display.



Evaluation



- > The prototype was tested with 15 participants (7 female) during cognition and precision demanding tasks.
- > Visual and audible alarms were perceived as similar undistracting. Visual critical alarms were more distracting than the uncritical and technical ones.
- > The readability of the display, as well as the alarms' identifiability, were rated as good for both conditions (light/sound).