DIPLORA CARDIGO

Designing a Wearable ECG for Sportive Cardiac Patients

The result of this thesis is a product vision consisting of a modular ECG device that attaches to a custom electrode patch. The device is optimized for small scale production and initial clinical testing. It is waterproof, durable and designed with minimal need for adhesives, fasteners and production steps to keep cost down whilst not compromising on sustainability, aesthetics or performance.

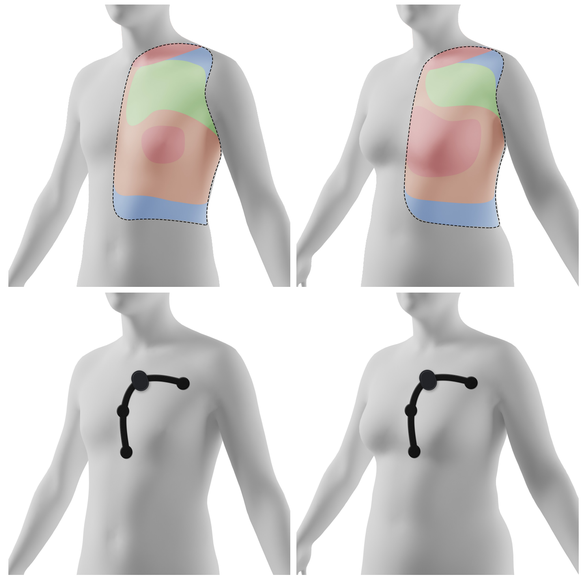
Client

Diplora, the client of this project, is developing a product service system that improves the quality of life for patients that require (preventative), at home, heart monitoring whilst maintaining high diagnostic capabilities.

Ergonomic performance

An ergonomic product design is key for a comfortable wearing experience and was thus developed through user participated research with physical prototypes. As a true testament to comfort, freedom-of-movement and mobility, the device was developed to endure sportive activities. Ergonomically relevant requirements were found and then implemented in the final design proposal. Design aspects that have the highest positive impact on comfort were found to be: minimal (adhesive) contact area with the skin, high conformity to skin wrinkling and a smooth low-profile design of the enclosure.

Diplora



Comfort score

Both men and women reward an average comfort score of 9.3 out of 10.
During sportive activities and sleeping this score was as high as 9.8.

"I forgot I was wearing it!"

(regulatory markings are for illustrative purposes only)

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