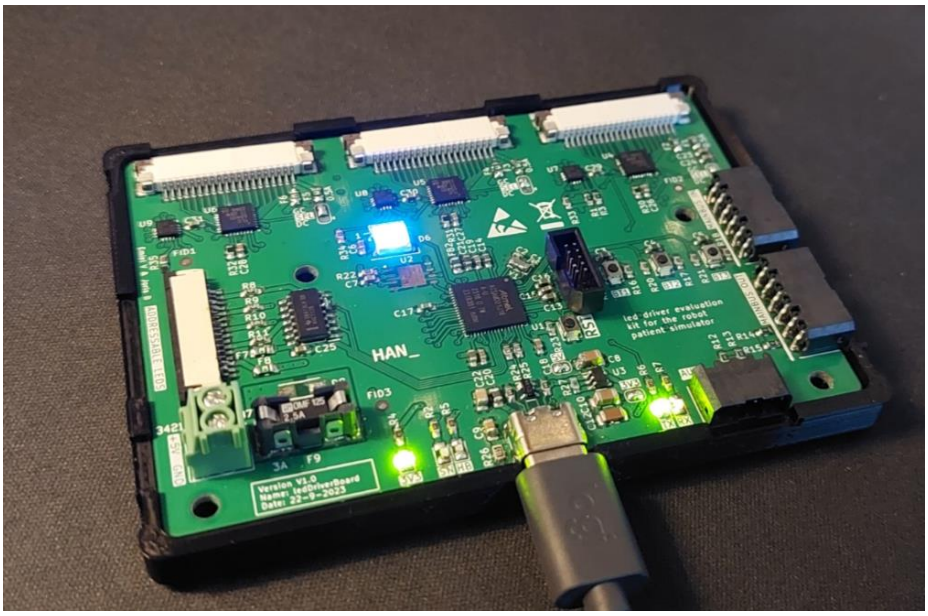
PROGRESS REPORT RGBBABY

Embedded Systems Engineering



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Summary

This project aims to develop a system for dynamically changing a reanimation doll's skin tone. In the previous phase, a test circuit board was successfully produced but transitioned to Arduino due to time constraints and programming complexities. Challenges included finding suitable board files and libraries. The current phase focuses on the final printed circuit board using Arduino, with testing involving a 10x10cm silicone skin piece. Despite delays in programming, the project remains on track. Future tasks include ordering/soldering boards, software development, testing, and presenting findings to the product owner. The positive prognosis for the new board design and ongoing programming suggests confidence in the project's success in the final period. Emphasis on timely documentation updates is crucial.

Introduction

Goal

This project aims to develop a system capable of dynamically altering the skin tone of a reanimation doll.

Previous phase

In the previous phase, we successfully produced a test circuit board and initially programmed it using embedded C. However, due to time constraints and the intricate nature of programming the microcontroller using embedded C, the decision was made to transition to Arduino, leveraging its extensive library support. However, we faced challenges in finding appropriate board files for the custom design and obtaining suitable libraries for the PWM LED driver and IO expander.

Current phase

The focus of the current phase is to develop the final printed circuit board based on the findings from the test board. Arduino will be used for programming, and the completed program must be delivered by the end of this phase. Testing will involve a 10x10cm piece of skin made out of silicone. The results will be presented to the product owner, a nurse at WKZ.

Activities and results

Executed activities

We have conducted tests on the test board and created various test programs, leading to design choices for the new board. Despite taking more time than expected, the project remains on track.

Obstacles

Despite taking more time than expected, the project remains on track. The programming aspect has proven to be challenging, especially with a microcontroller not natively supported by the Arduino IDE.

Future

To do

- Order the new printed circuit boards.
- Solder the boards.
- Develop software for the boards.
- Test the system with a 10x10cm piece of skin made out of silicone.
- Present findings to the product owner, a nurse at the WKZ.
- Update documentation to align with the current project status.

Next period

This is the final period.

Conclusions and recommendations

The prognosis is positive, with the new board design ready for ordering, and programming already underway. We do not see a need for significant changes in our approach at this time. It is however, important that updating documentation is crucial to keep it current with the project's progress. Overall, the team remains confident in the project's trajectory.