

Intelligent Patient Record

ITU

Mathias Schmidt, Thomas Snaidero

Supervisors:

Steven Houben, Mads Frost

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1 Introduction

We have had the task of build a new revision, of Steven Houben Hyper Record. One of the big reasons is it was to unwieldy and heavy for the medical staff.

2 Design requirements

Numbered list of product requirements with most important first, least important last.

3 Use case scenarios

Detailed description of 3 use case scenarios which illustrate: - The user experience - Insight about a specific product feature, or user requirement

4 Design analysis and concept diagrams

Description of issues related to the design of the product: - Description of concepts, requirements and features of the product - Review of motivations for making the design decisions - Indicate the primary features of the design that are the most creative and original

4.1 Materials

For this project we got a bunch of different plast materials from RIAS, in order to find some material that might be cheaper, and better than acrylic, since acrylic have tendency to be brittle, this becomes worse when it has been laser cut. all of the plastic was thermoplastic, which is a term that is used in the laser industri to indicate that it can be laser cut. for the laser cutter we made some simple figures to see what the result would be.

4.1.1 PEHD

The first material that we tryed to cut was, PEHD which is used in the production of ex. plastic bottles and corrosion-resistant piping it is know for having a high strength to density ratio. The cutting went fine, but there was some resedu left over from the cutting, that we had some problems removing.

4.1.2 RIALEN PP

RIALEN PP is most commenly used in packaging and labeling, and it has resistant to many chemical solvents, bases and acids. The cuttig had some big problems, one of them was that after 3 cutting rounds, the laser still haven't cut through the material, which ment we had to let it be, and not trying to cut in that material.



Figure 1: *Cut test of PEHD*

4.1.3 PETG

PETG is used a lot in the production of plastic bottles, and is a durable material. The cutting process did not go as hoped, beside that one can see the burn marks, it also had a very strong chemical smell, that took a long time to dissipate.

4.1.4 PP-H

4.1.5 POM-C

POM-C is a material that works well with laser cutting, it is used commonly in small gear wheels, ball bearings, and many other products where you need low friction and stiffness. The cutting of it went fine, but we found out that if we want to use it, we may have some problems since the glue, that is used for it is highly toxic, furthermore the material is expensive compared to Acrylic.

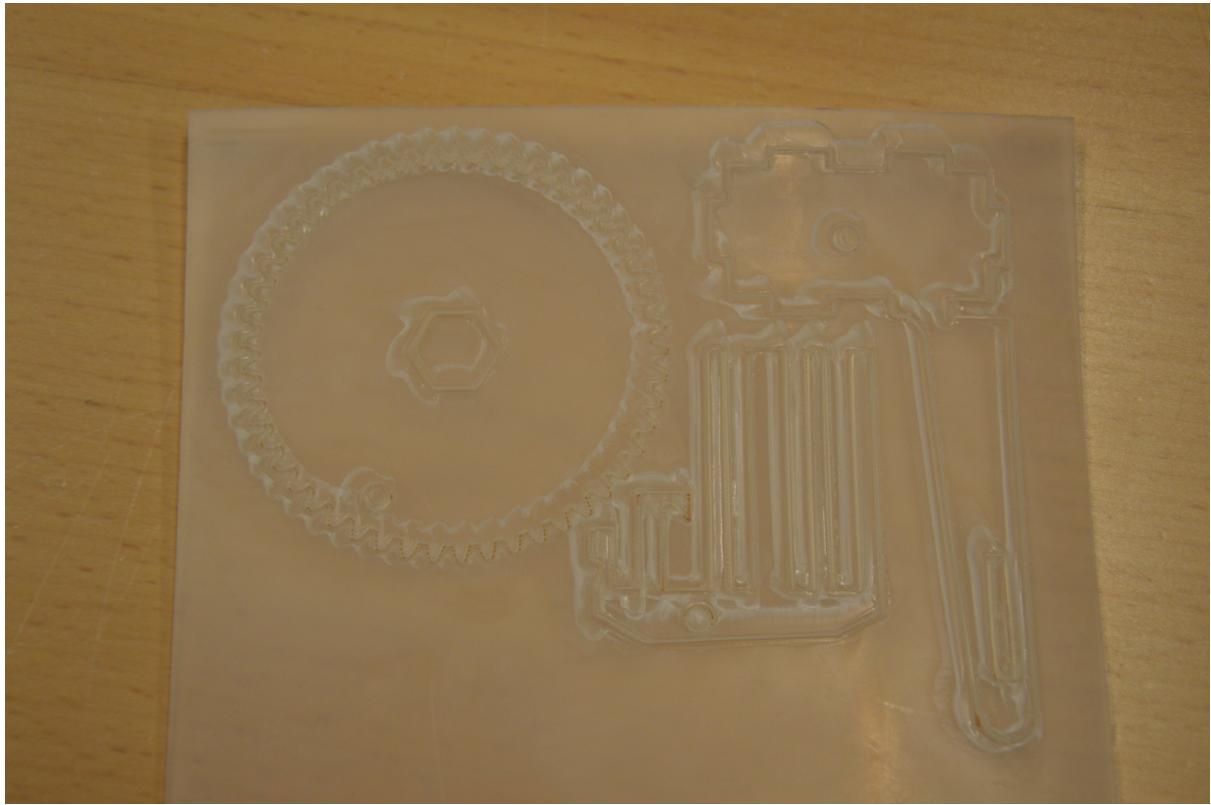


Figure 2: *Cut of RIALEN PP*

4.1.6 PEEK

PEEK is one of the materials that we would have liked to try out since it is one of the materials that are used in the medical industry, however it is an expensive material and it is hard to get, we did have some conversion over mail with RIAS, but was unable to secure some samples.

4.1.7 ACRYL

4.2 Iterations

We have used prototyping in order to get a viable device, through the different designs we have been able to see different problems, which have meant that we had to iterate to a new version, we have been limited by time, so we have had to make some compromises.

4.2.1 first

The first iteration that we built did have some problems. The first is that it is expensive to build, since we are using a lot of acrylic, the second point is that it still is heavy, and unwieldy. But it

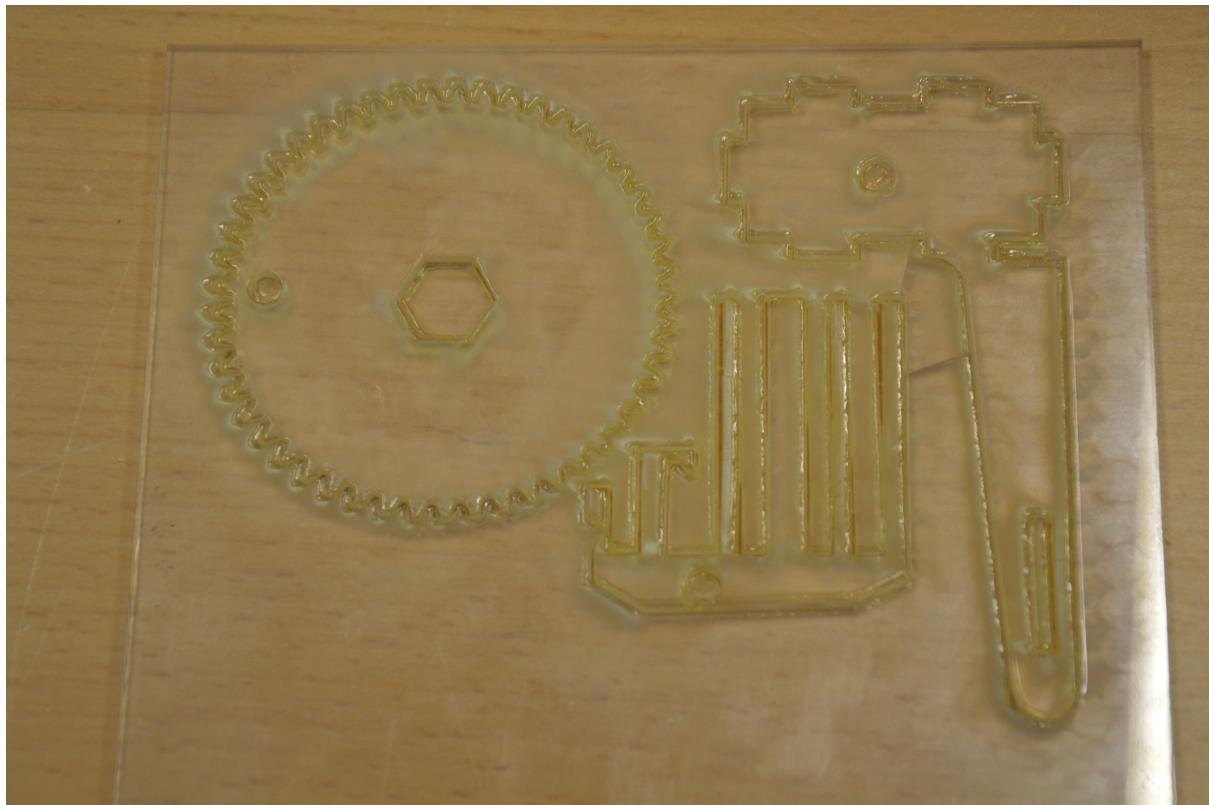


Figure 3: *Cut test of PETG*

did give some ideas for the next iteration.

4.2.2 secound

4.2.3 thried

4.2.4 fourth

4.2.5 fifth

4.2.6 sixth

5 Prototyping analysis

Discussion of experience in building prototypes during the design process: - Illustration of all the prototyping activities - Discussion of specific areas where the experience of building prototypes affected the design requirements and specifications

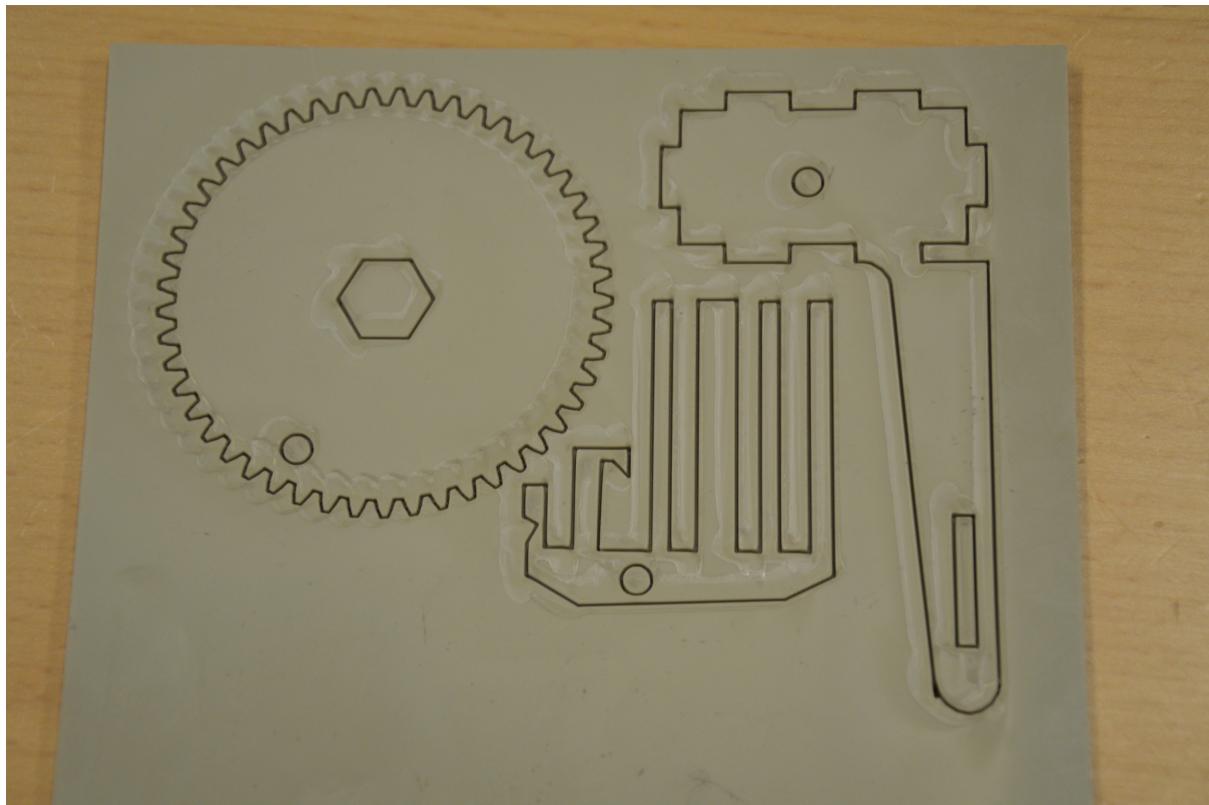


Figure 4: *Cut test of PP-H*

6 Design specifications

Explanations of how to build the product, including information such as:
- System architecture -
Drawings and sketches - Parts and supply ordering information

Design specifications marked for:
- Quality - Accuracy - Originality

7 TESTING - ignore

8 Conclusions



Figure 5: *Cut test of POM-C*

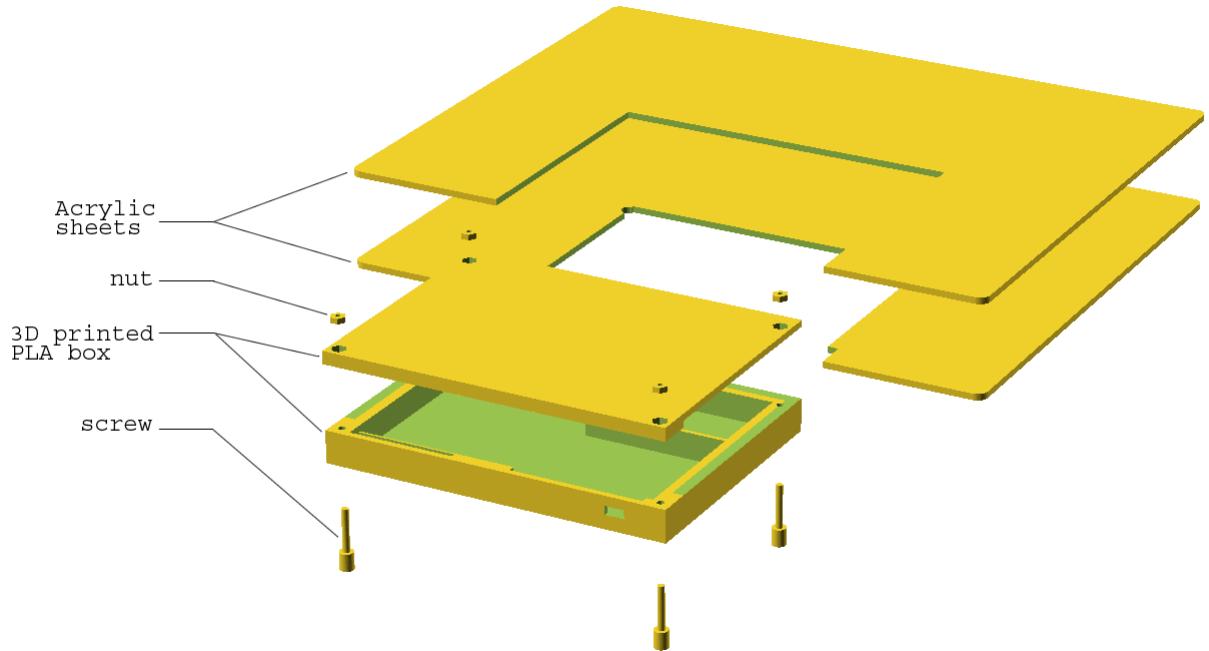


Figure 6: This is a description

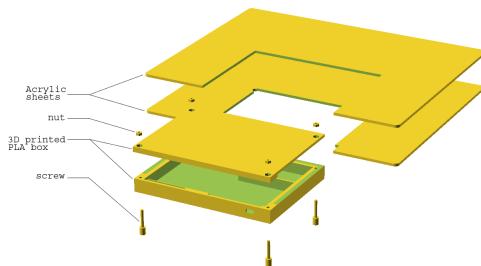


Figure 7: This is a description

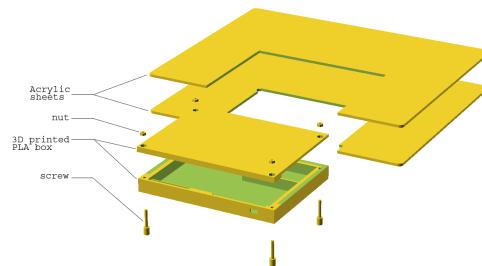


Figure 8: This is a description