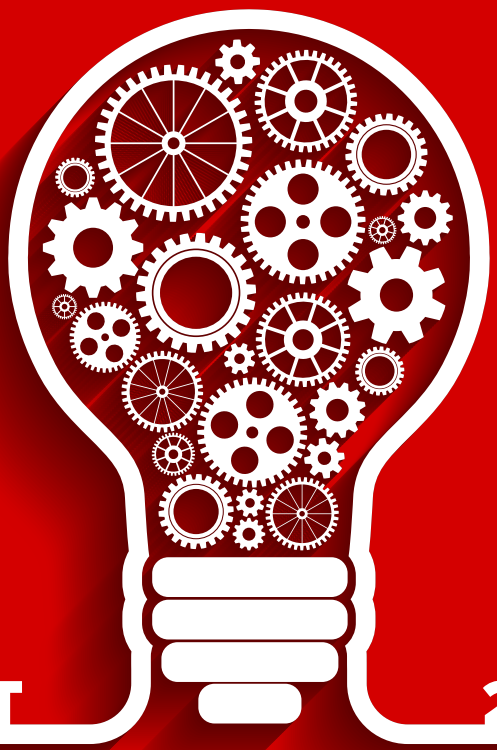
PORTFOLIO

THOMAS DE ROECK



PRODUCTDEVELOPMENT

2020

THOMAS DE ROECK

10-11-1999 @Eeklo

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thomasderoeck.be
(Work In Progress)

linkedin.com/in/
thomasderoeck

2011-2017
Science-Mathematics
Emmaüs Aalter

2017-2022
Productdevelopment (Msc)
University of Antwerp

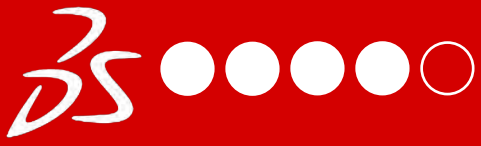
2015, 2016
Financial Media

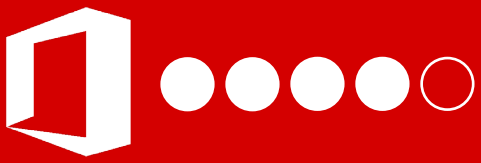
2017, 2018
Cobofisk

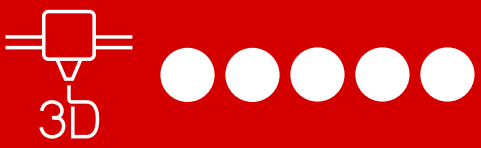
2019, 2020
Thingit (www.thingit.be)
Technology valorisation support
Project around cast iron
Project around recycling
Website Builder

ABOUT ME

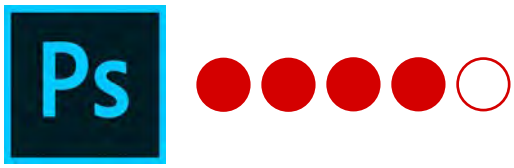
SKiLLS

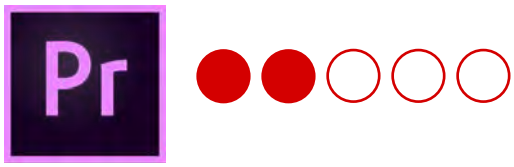


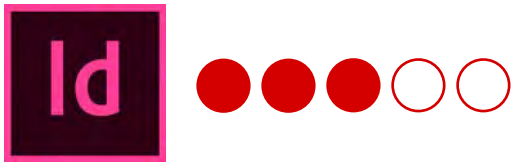


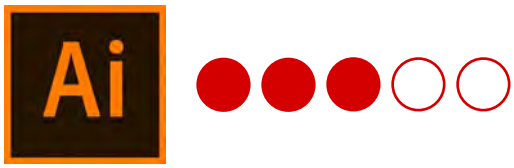


AND STiLL
LEARNING MORE...









EXAMPLES: SEE FURTHER

DOWNLOAD PORTFOLiO: thomasderoeck.be/portfolio

MY DESIGNS

TECHNICAL

I prefer working on the technical side of products.

I have great experience with prototyping using 3D-printing, Arduino, laser-cutting...

PROTOTYPING

CAD

CAD (Solidworks...) is my preferred designtool.

Complex tasks are no problem for me. I like a challenge and I am ambitious in al my projects.

AMBITIOUS

CONTROL

I like to follow every stage in the productdevelopment proces from basic idea to end-of-life.

Design should be fun, right? I try to integrate fun elements into every design.

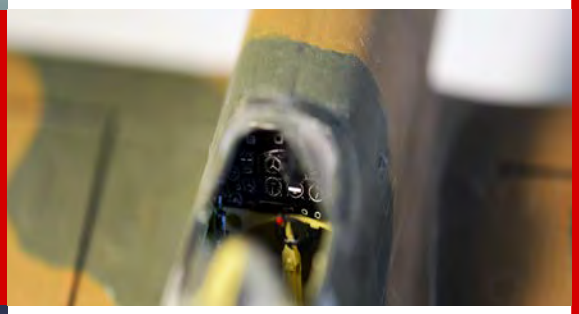
FUN

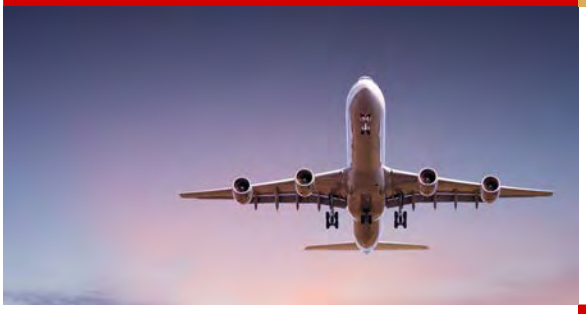
MY iNTERESTS

3D-PRiNTiNG

FORMULA 1

MODELMAKiNG





TECHNOLOGY

LiGHTiNG

SOLO PROJECT

Moodboard volcanoes

Finished product

Components ready for shipping

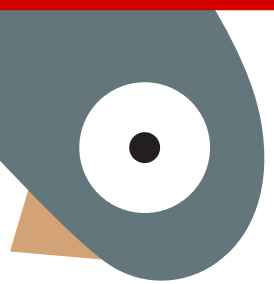
WHAT?	Design of mood lighting using wood veneer
HOW?	Moodboards for inspiration (volcanoes) and paper prototyping
WHEN?	1st Bachelor (2017)
FOCUS?	Aesthetics, producibility, economy, ecology
RESULT?	Laser-cut birch veneer mood lighting, ready for production.

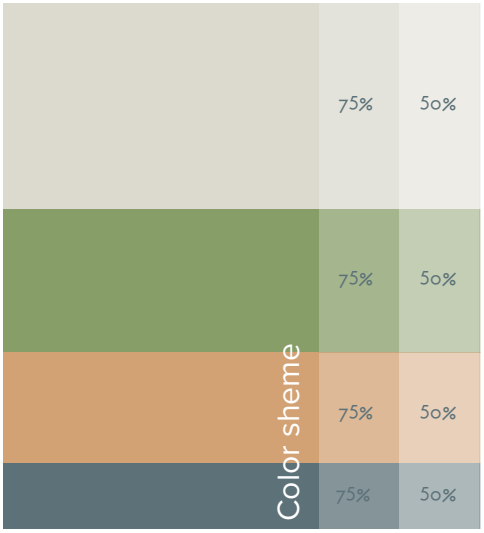
GiTO

TEAM EFFORT

gito

Gardening, imagine the outside

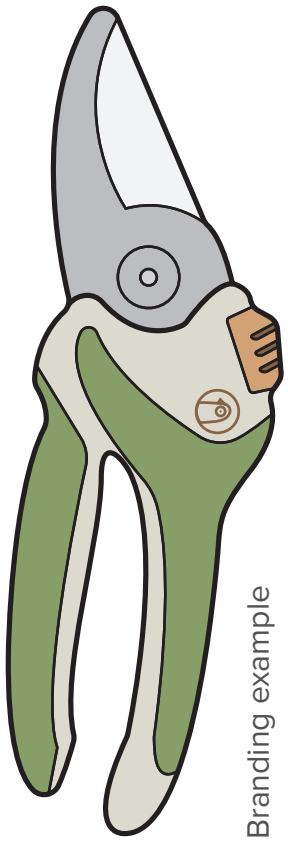




gito

Finished logo, black and white

Moodboard target market



Branding example

WHAT? Design a brand identity and logo for a brand producing garden products

HOW? Market analysis, Photoshop, Illustrator

WHEN? 2nd Bachelor (2019)

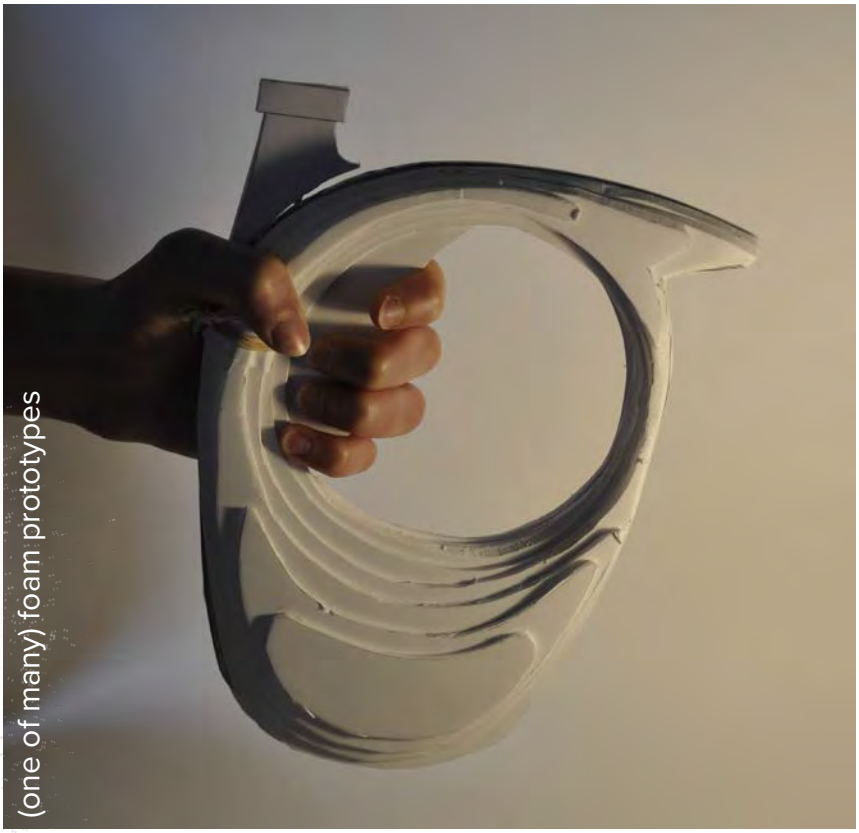
FOCUS? Brand identity and logo fits the target market, coherence

RESULT? Pigeons have completely adapted to the modern city. They live, eat, sleep... there. You'd almost forget they originally came from the countryside, the forest... Just like the target market for our brand GITO. People who moved to the city, but brought a piece of nature with them under the form of community gardens in the city. Just like the pigeon. That's why the pigeon is the face of our brand. Colours, shapes, fonts... were in tune with the target market.

PLANT SPRAYER

SOLO PROJECT

Design sketch

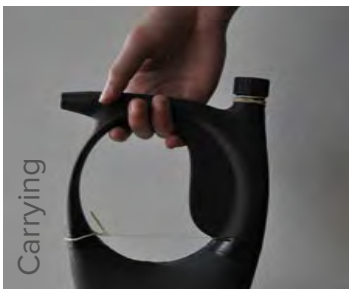


(one of many) foam prototypes

Render of usage

3D printed final model

Filling



Carrying

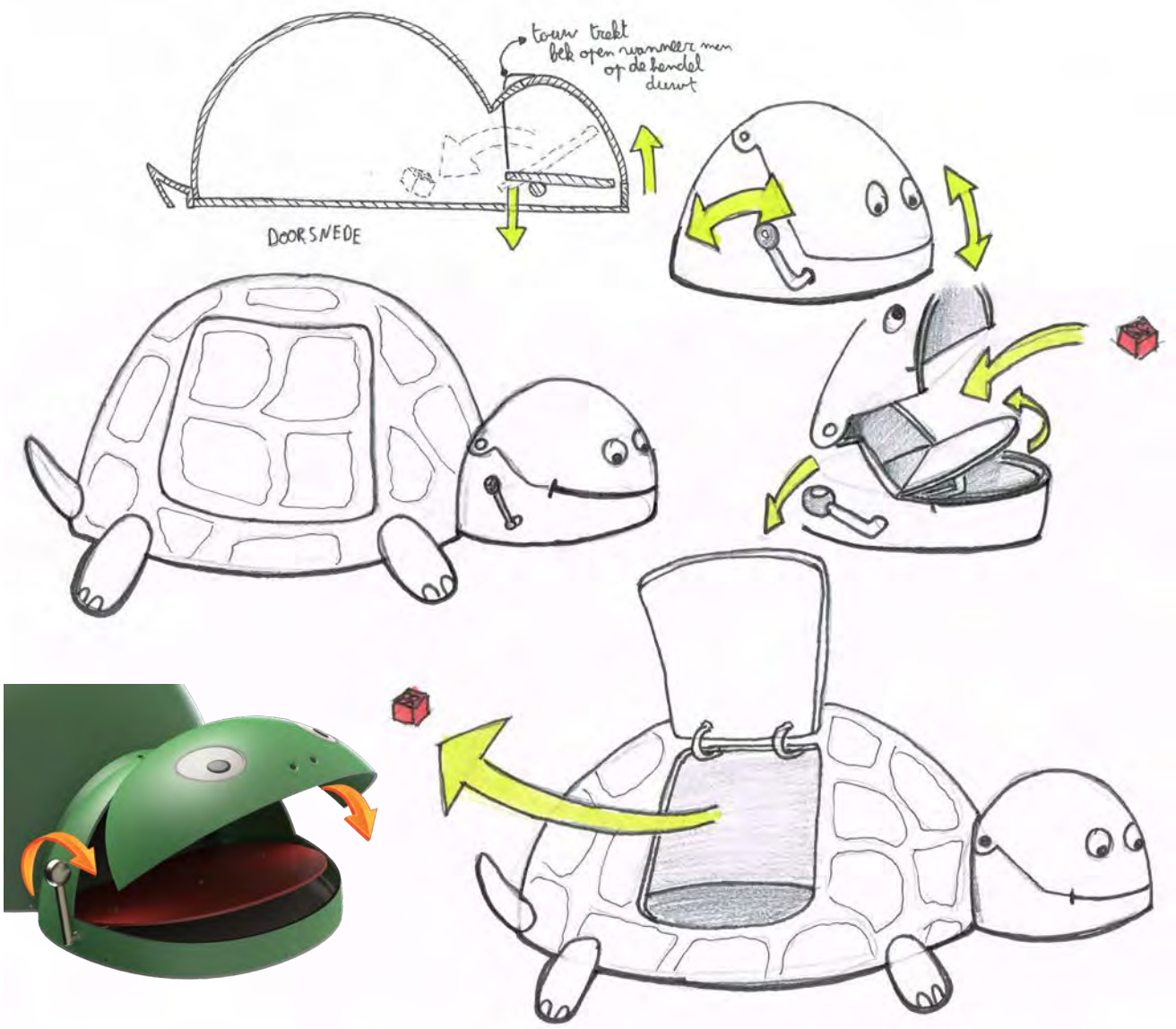
gito

Branding

WHAT? Design a plant sprayer based on the GITO brand identity (see earlier)
HOW? Sketching, foam prototyping, CAD, 3D-printing
WHEN? 2nd Bachelor (2019)
FOCUS? Ergonomics, brand identity, producibility, aesthetics
RESULT? Plant sprayer based upon the GITO brand identity, using shapes and colours fitting the target market. The design focusses on ergonomics with the Design For All principles in mind. Other students created other tools using the same GITO brand identity.

TIDY THE TURTLE

SOLO PROJECT



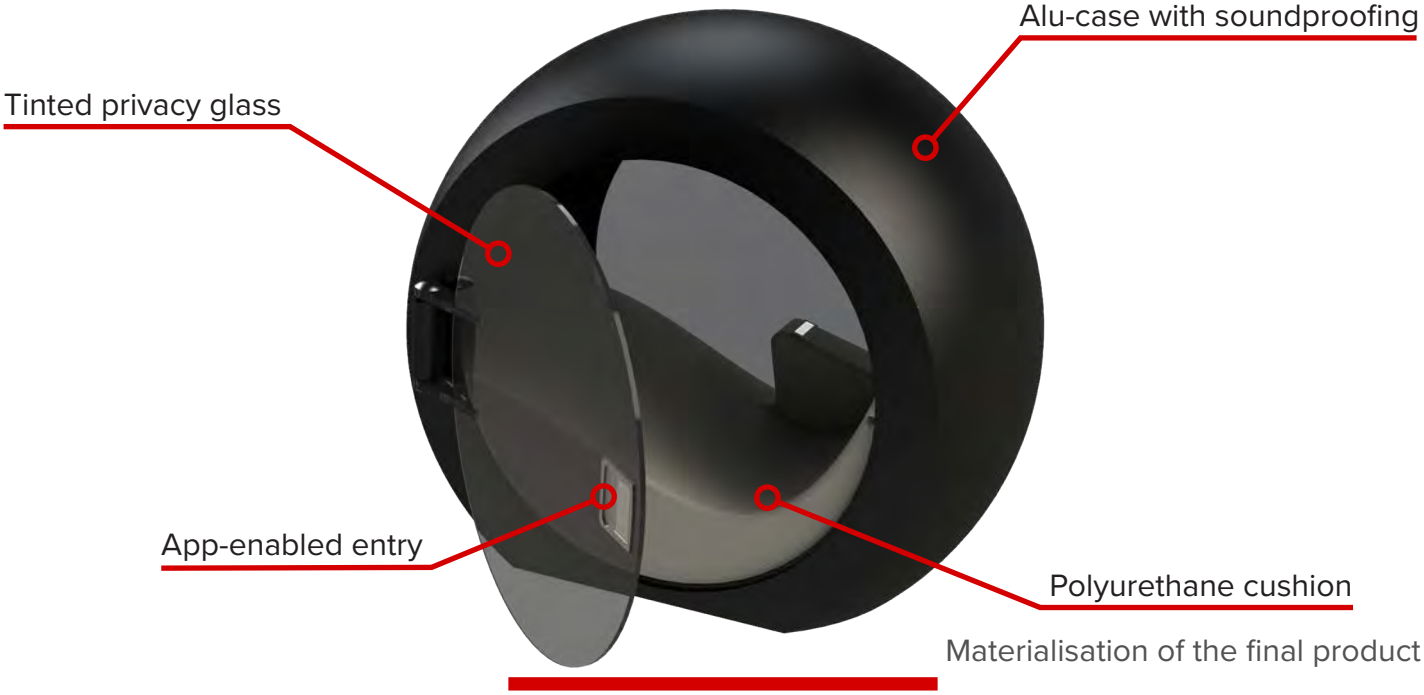
Design sketches and working principle

Usage

WHAT? Increase the longevity of toys
HOW? Workshops, sketching, CAD
WHEN? 2nd Bachelor (2018)
FOCUS? Ecology, economy, producibility
RESULT? Tidy the Turtle encourages children to clean their toys up, by making the cleaning process more enjoyable. The turtle 'eats' the toys and interacts with the children. Toys are safely stored (increasing longevity) and children learn to respect their stuff more.

RESENSE

TEAM EFFORT

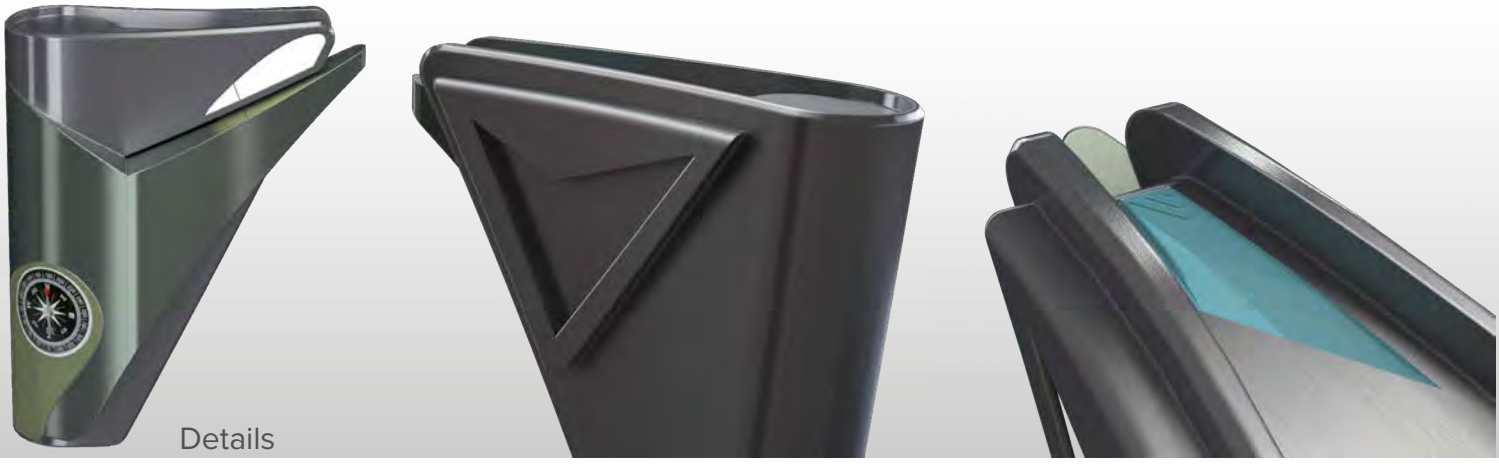


WHAT? Stimulate local tourism (one week project)
HOW? Sketching, CAD, 3D-printing, giving presentations, making posters
WHEN? 2nd Bachelor (2019)
FOCUS? Presenting
RESULT? Resense is a small pod which can be placed anywhere in the city. Once entered, there only is silence. Resense gives a way to escape the daily routine in the busy city without having to travel abroad.

CONTAINER

TEAM EFFORT

Final design including Swiss knife, integrated flashlight, flare and dog tag.



Details

WHAT? Personal container tailored to the needs and personality of a person

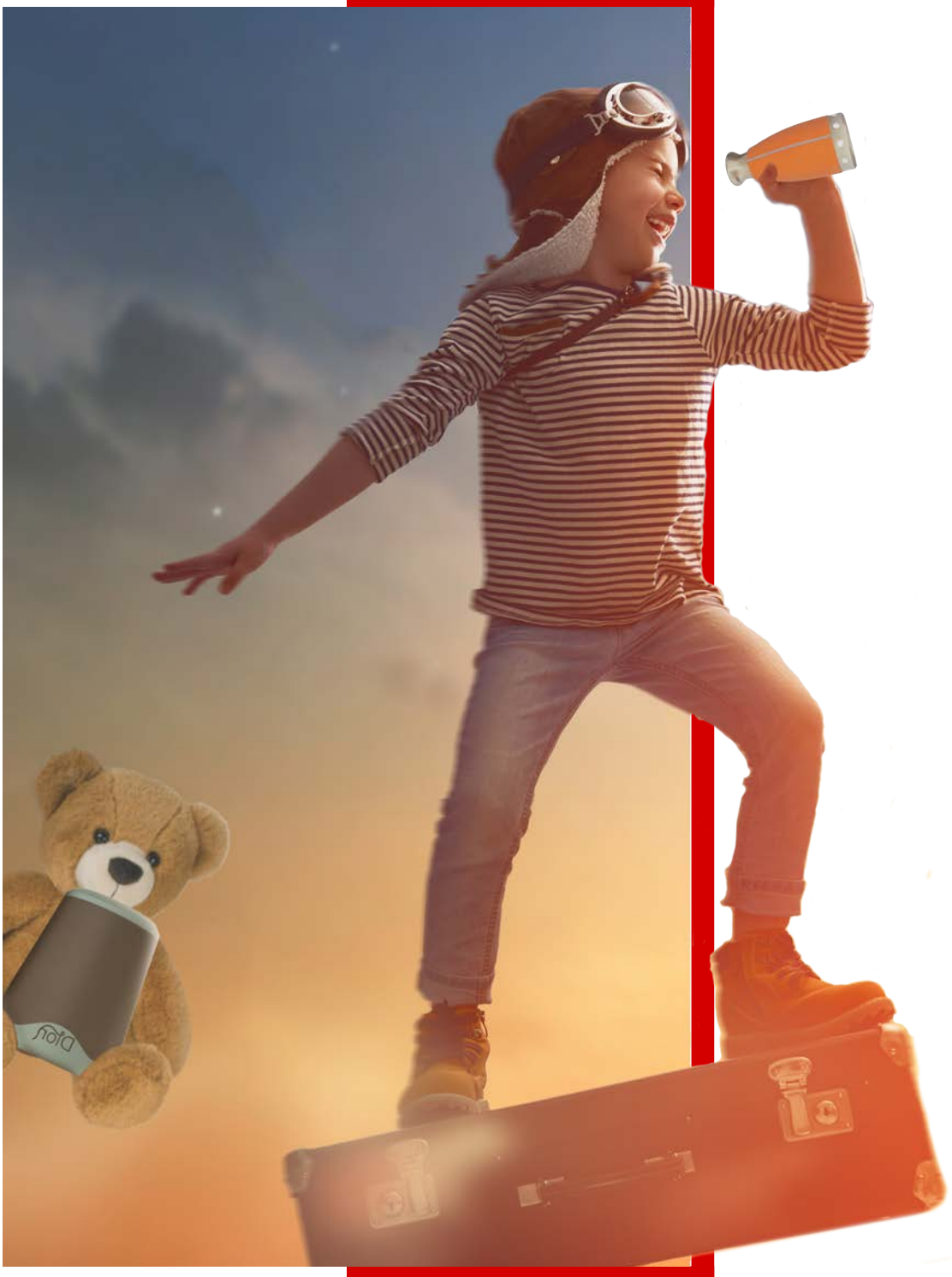
HOW? Sketching, CAD, foam prototyping

WHEN? 2nd Bachelor (2018)

FOCUS? Aesthetics, personalisation, reference to the target person

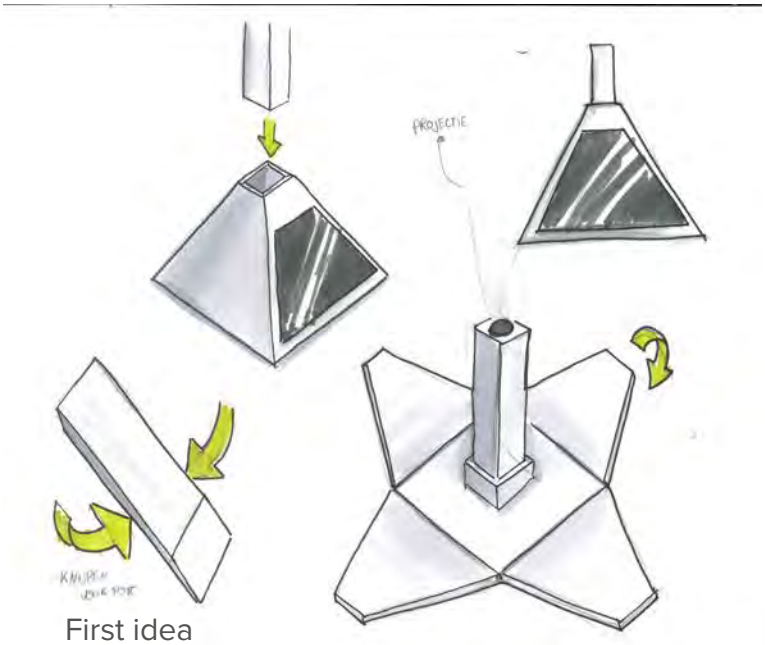
RESULT? Personal container for a female fighter pilot. The duality between the soft, female side and the tough military side is clearly visible. The container is filled with functional and emotional products.

UX

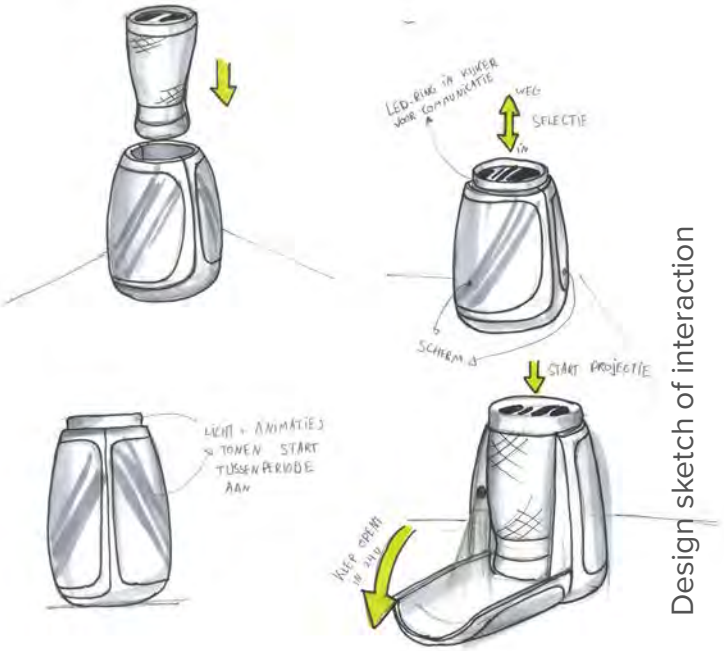


TEAM EFFORT

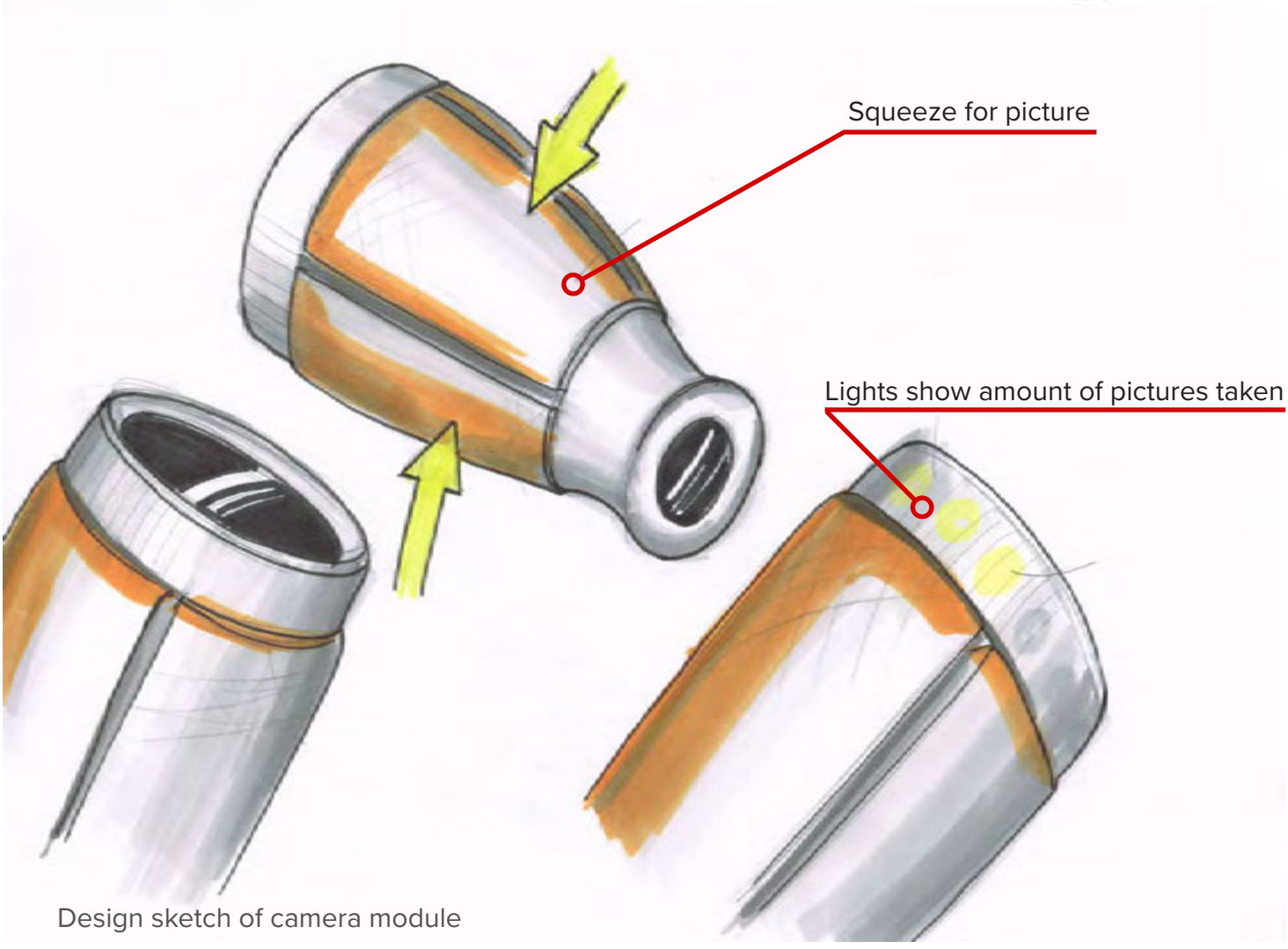
(one concept/person, my concept was the final concept)



First idea



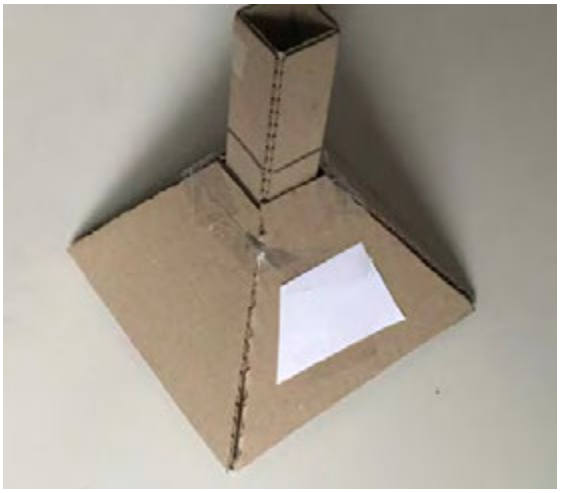
Design sketch of interaction



Design sketch of camera module

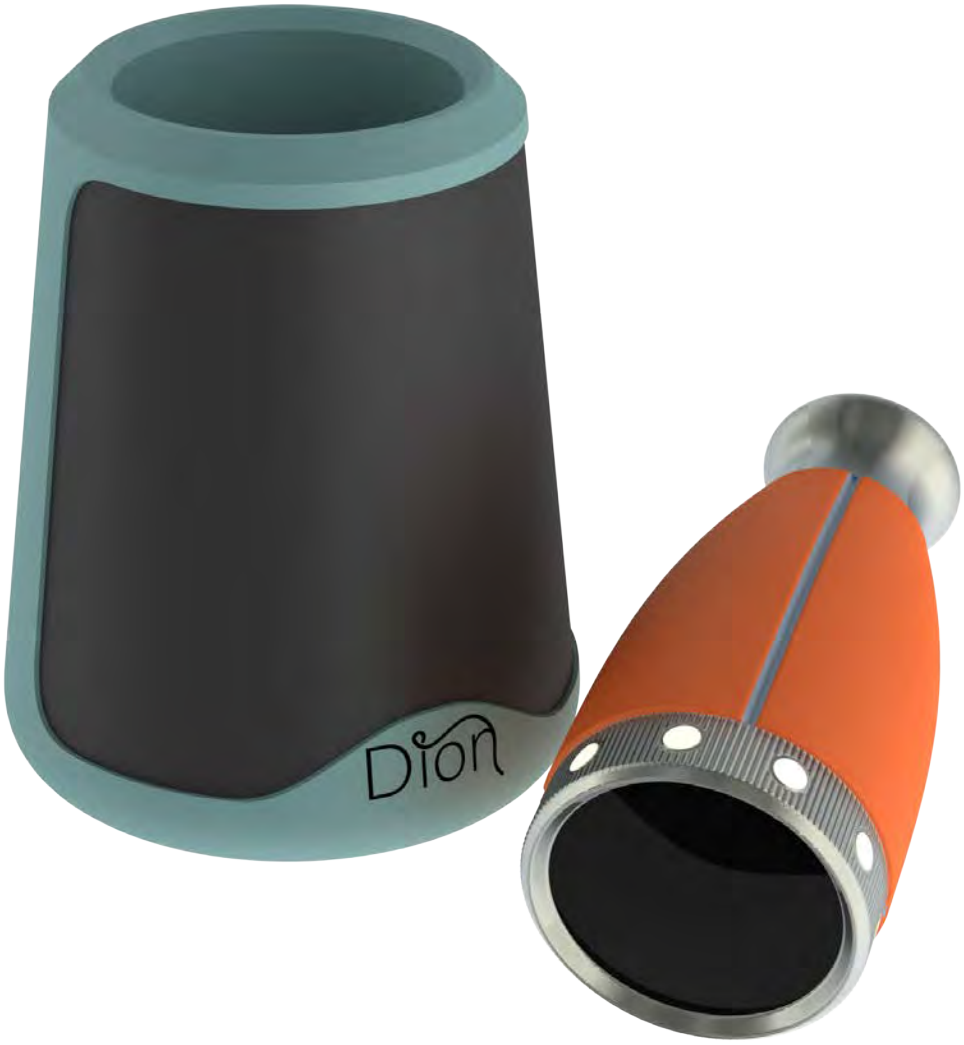
WHAT? User experience design, rich interaction
HOW? Sketching, lots of cardboard models and many tests with users
WHEN? 3th Bachelor (2019)
FOCUS? User experience
RESULT? Dion is a dreamcatcher. By squeezing the mobile camera a picture is taken. When placed in the home station, these pictures are converted into a short animation. The home station opens and the animation is projected.

UX - PROTOTYPING



Final prototype

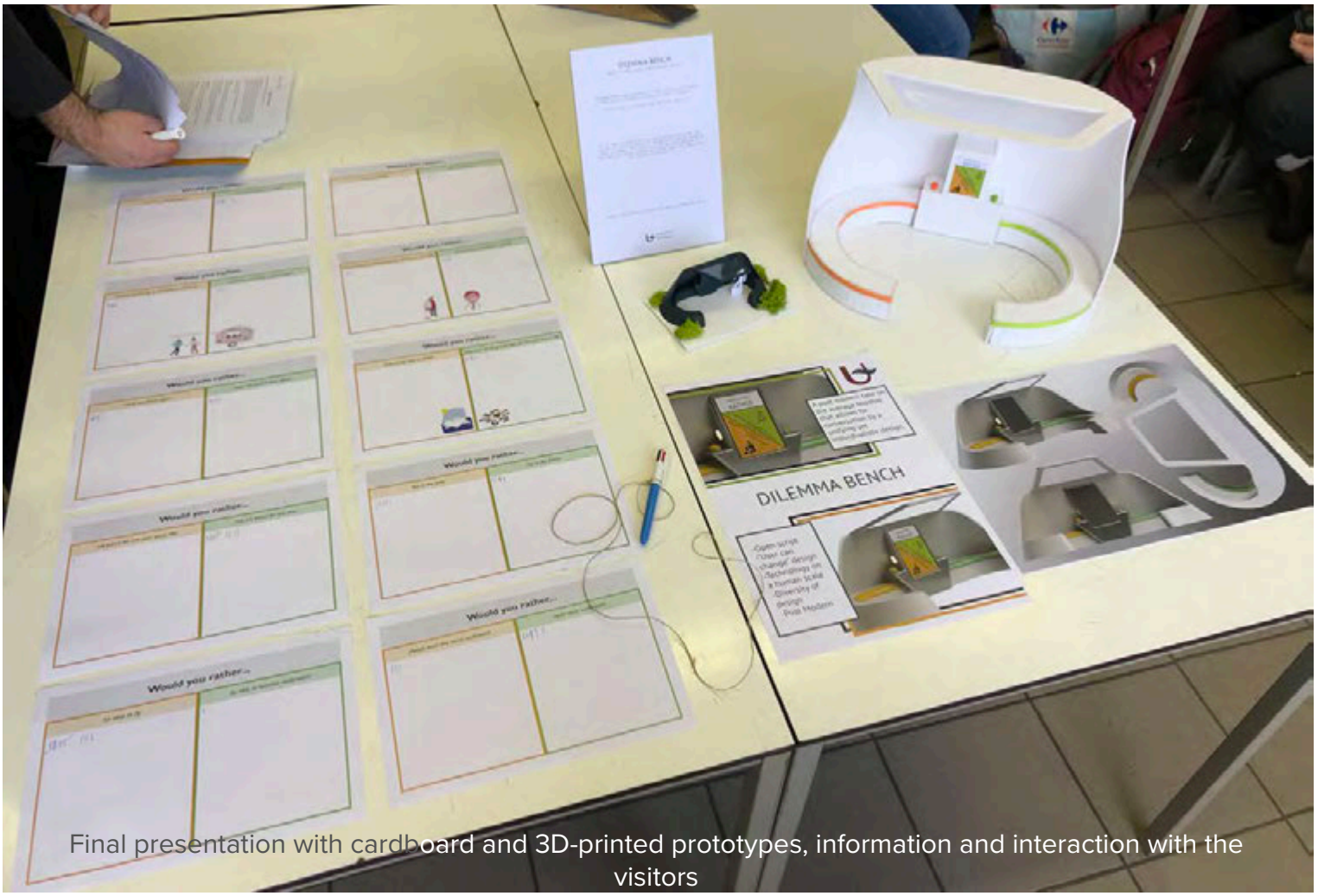
Usage of product



Final product

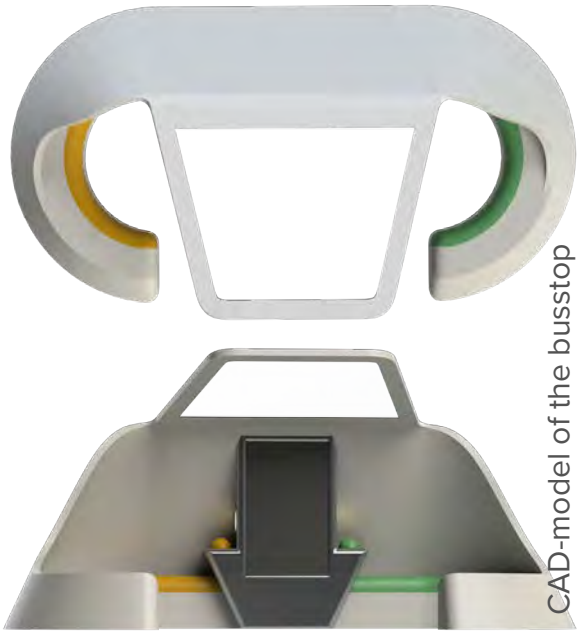
BUS STOP

TEAM EFFORT



Final presentation with cardboard and 3D-printed prototypes, information and interaction with the visitors

Take a seat and have a discussion!



CAD-model of the busstop

WHAT? Open script design (one week project)

HOW? Intensive brainstorming, exploring the city, sketching, 3D printing, presentations

WHEN? 3th Bachelor (2020)

FOCUS? Open script design

RESULT? We came up with the DILEMMA BENCH. DILEMMA BENCH was designed with the intention to incite conversation between strangers on public transport. Scan your ticket and choose a side. Would you rather never celebrate your birthday or never celebrate Christmas? You decide. The dilemmas change every day and are a great way to start a conversation with strangers while waiting for your bus to arrive.

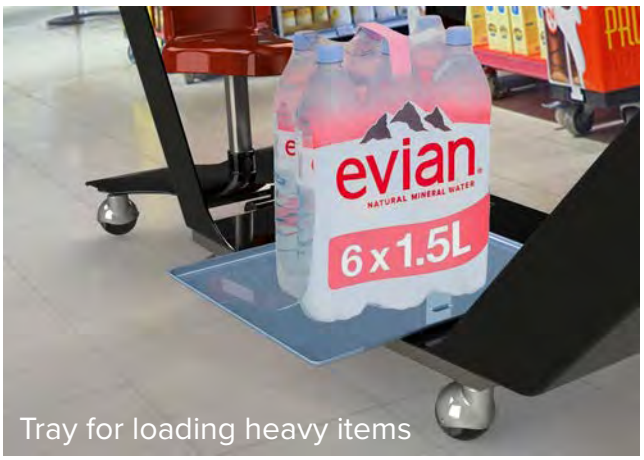
SHOPPING CART

TEAM EFFORT

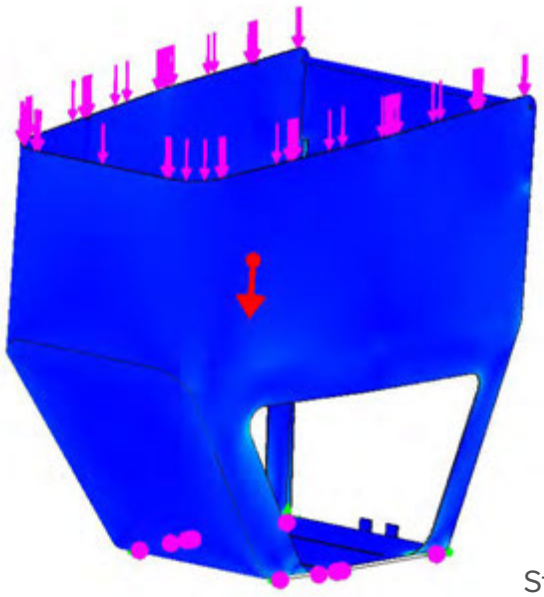
Child seat

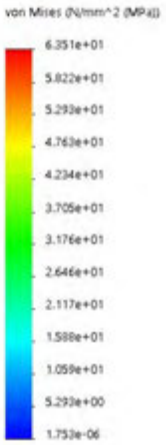
Possibility to connect walker

Same storage-space needed as for current shopping carts

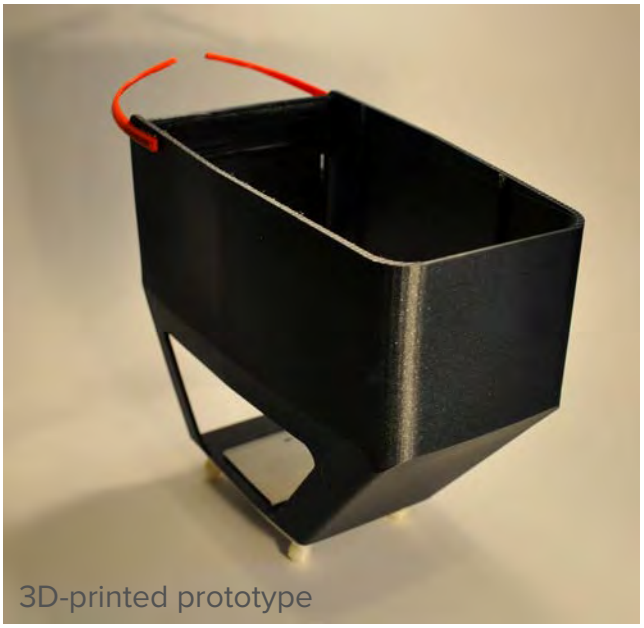


Tray for loading heavy items





Strenght calculation



3D-printed prototype

WHAT? Increase mobility by designing a sheet moulding compound product

HOW? Factory visit, brainstorming, sketching, 3D printing, CAD, rendering

WHEN? 2nd Bachelor (2018)

FOCUS? Producibility (SMC), aesthetics, mobility, economy

RESULT? Nowadays you need training to handle the modern shopping carts. They are often broken, uneasy to use and let's be honest, they don't look that great. We wanted to change this. We redesigned the shopping cart to be more practical, easy and fun to use. The shopping cart is made entirely from SMC and has an automatic levelling load area, improved handling and a tray for loading heavy items.

MOBE

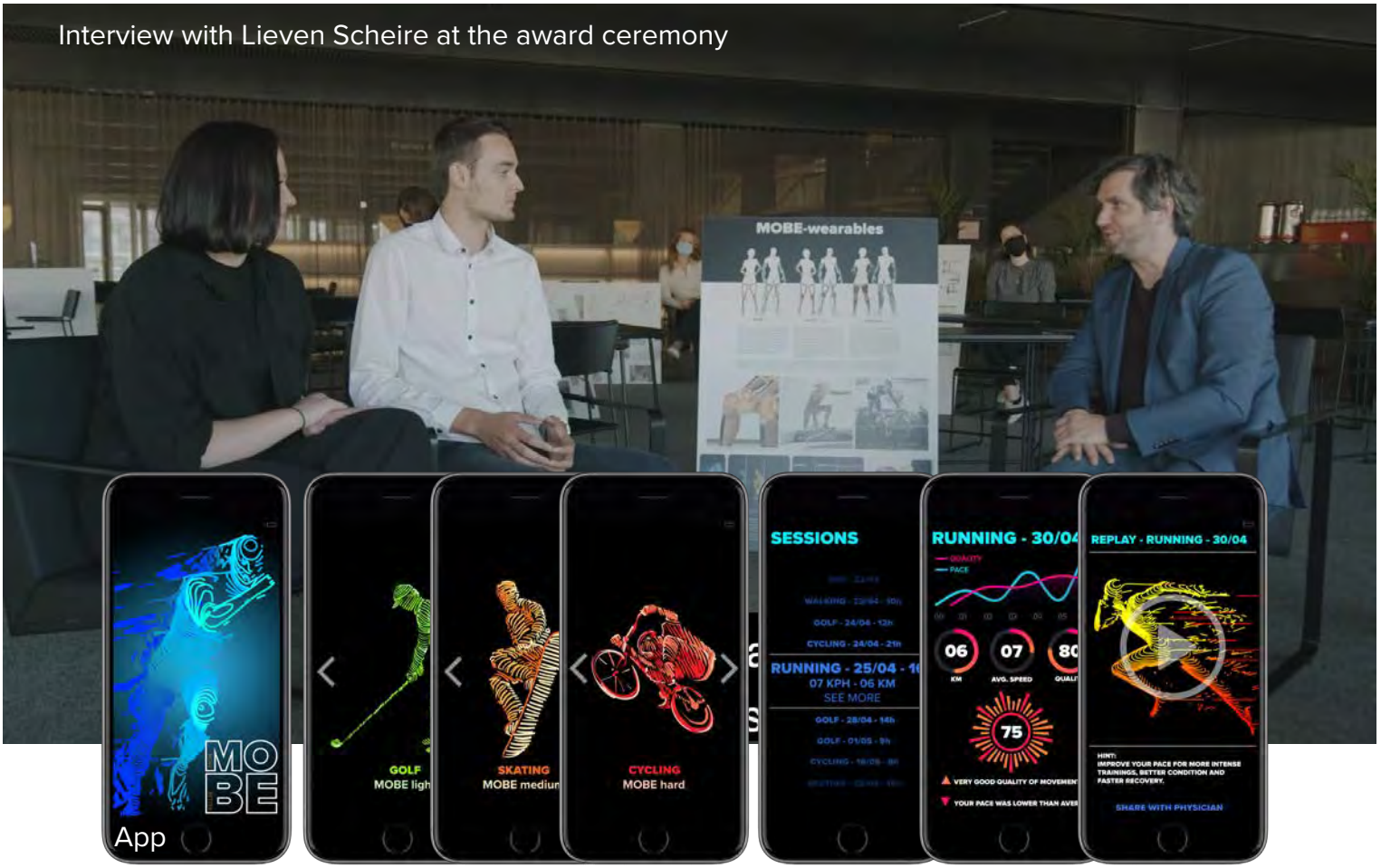
TEAM EFFORT

U Design for real people INTER

Winners of the competition

https://www.udesign.world/winnaars

Different versions of MOBE



Interview with Lieven Scheire at the award ceremony

WHAT? Modular wearables for monitoring and improving movements during variety of activities

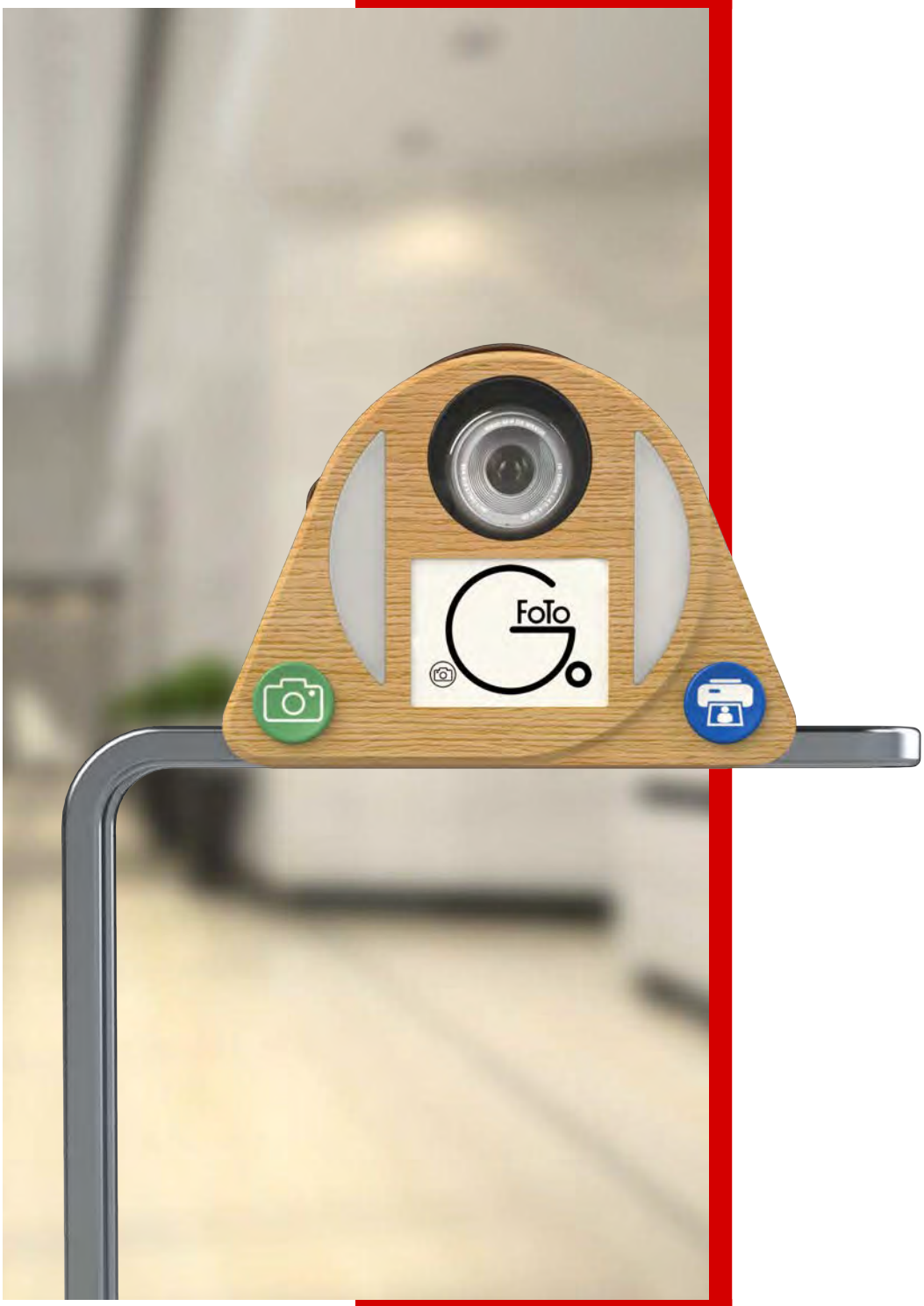
HOW? Brainstorming, design tools, sketching

WHEN? 3th Bachelor (2020)

FOCUS? Design for All

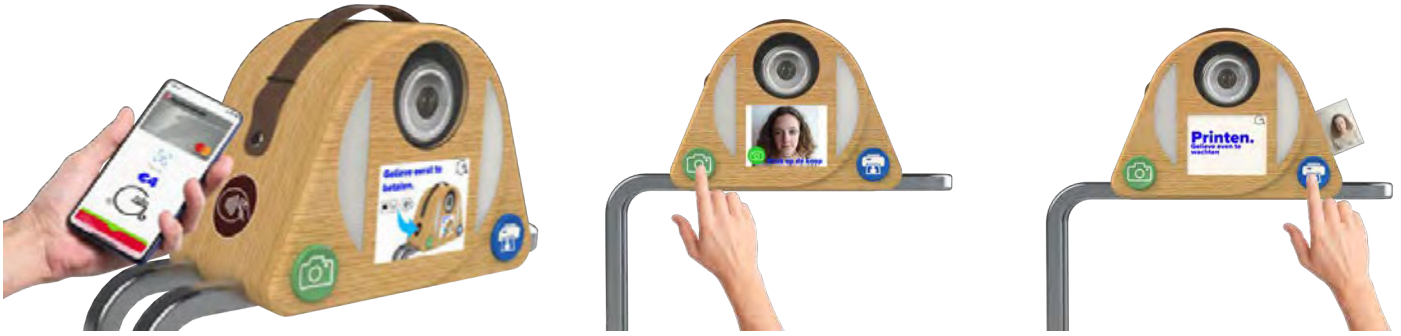
RESULT? MOBE is a modular set of wearables equipped with body motion tracking technology. This allows for replays to be shown in an app. The app gives tips on how to improve movements, for example while golfing. the user can also review the movement. Connection with a physician can be established using chat or videocall for users in rehabilitation or with movement related problems. Statistics and data are stored in the app. MOBE can be expanded with protection and there are multiple sizes and colours available, so there is always a right MOBE for everyone. This design won the Udesign for real people challenge from Inter in 2020

PHOTOBOOTH



SOLO PROJECT

Photo booth in context



Pay. Picture. Print

WHAT? Bachelors thesis: design of a photobooth

HOW? Analysing, sketching, CAD, rendering, ergonomics, production... the entire productdevelopment “package”

WHEN? 3th Bachelor (2020)

FOCUS? The entire productdevelopment process

RESULT? I created the FotoGO-photobooth, a mobile solution for small towns with limited opening times for their town hall offices. It’s often not interesting for small towns to invest in a photobooth to take pictures for their ID. Short opening hours mean an inefficient usage of the expensive equipment. The FotoGO-photobooth is a solution for this problem. A mobile photobooth allows for example town A to hire the photobooth in the morning, during their opening times, and town B can hire the photobooth in the afternoon, during their opening hours. In-between the photobooth can be used in the local school or sports club. The photobooth consists of a collapsible frame with wheels and a separate piece with the expensive technical equipment. The photobooth is easy to install and use with a simplified interface only using 2 buttons. The photobooth was designed using the “Design for All” principles.

PHOTOBOOTH

Collapsing frame with wheels for easy transport

Frame fits in normal car

Easy installation

Easy assembly using sheet metal part

Exploded view

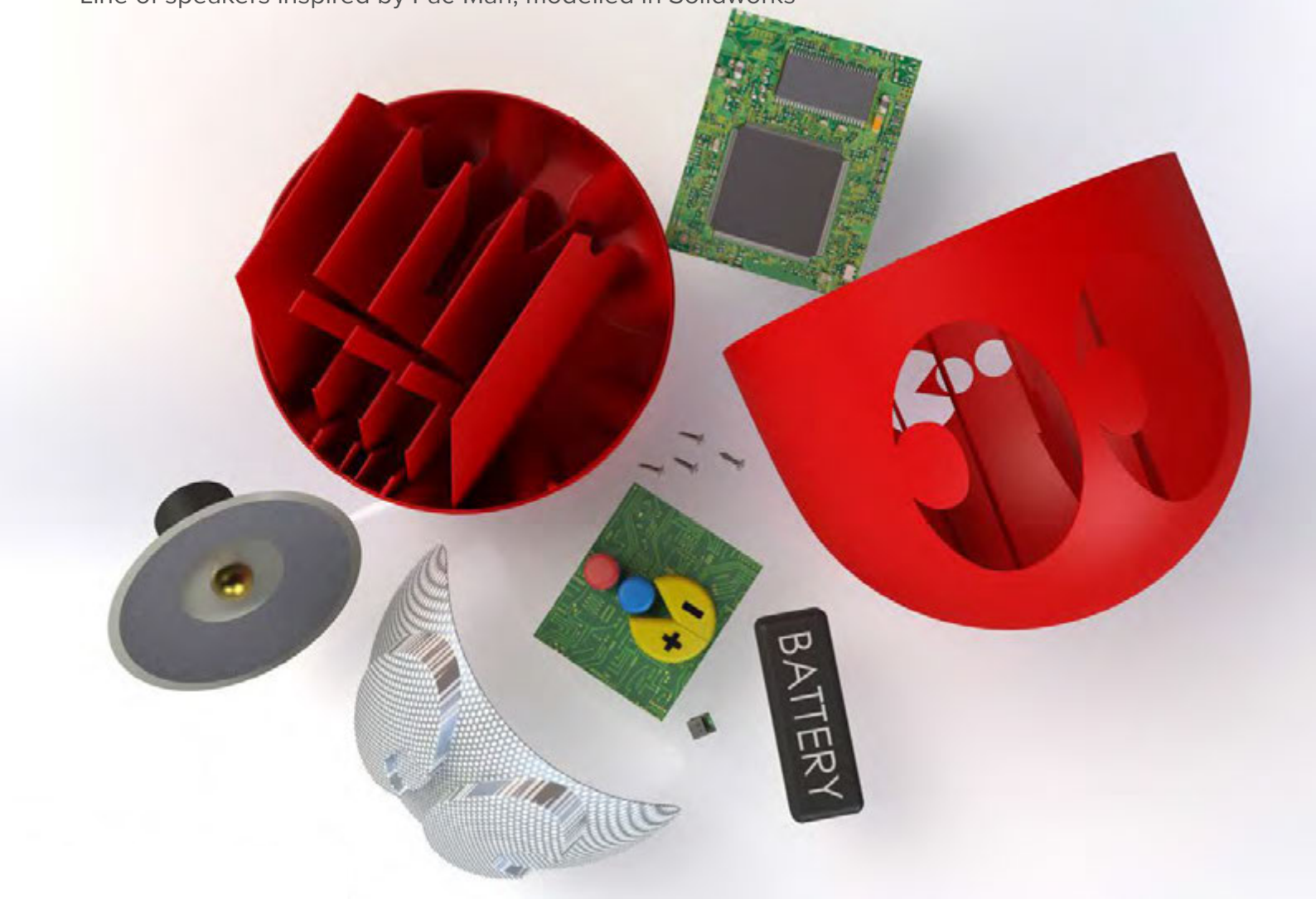
SOLIDWORKS

Dragon modelled and rendered using Solidworks

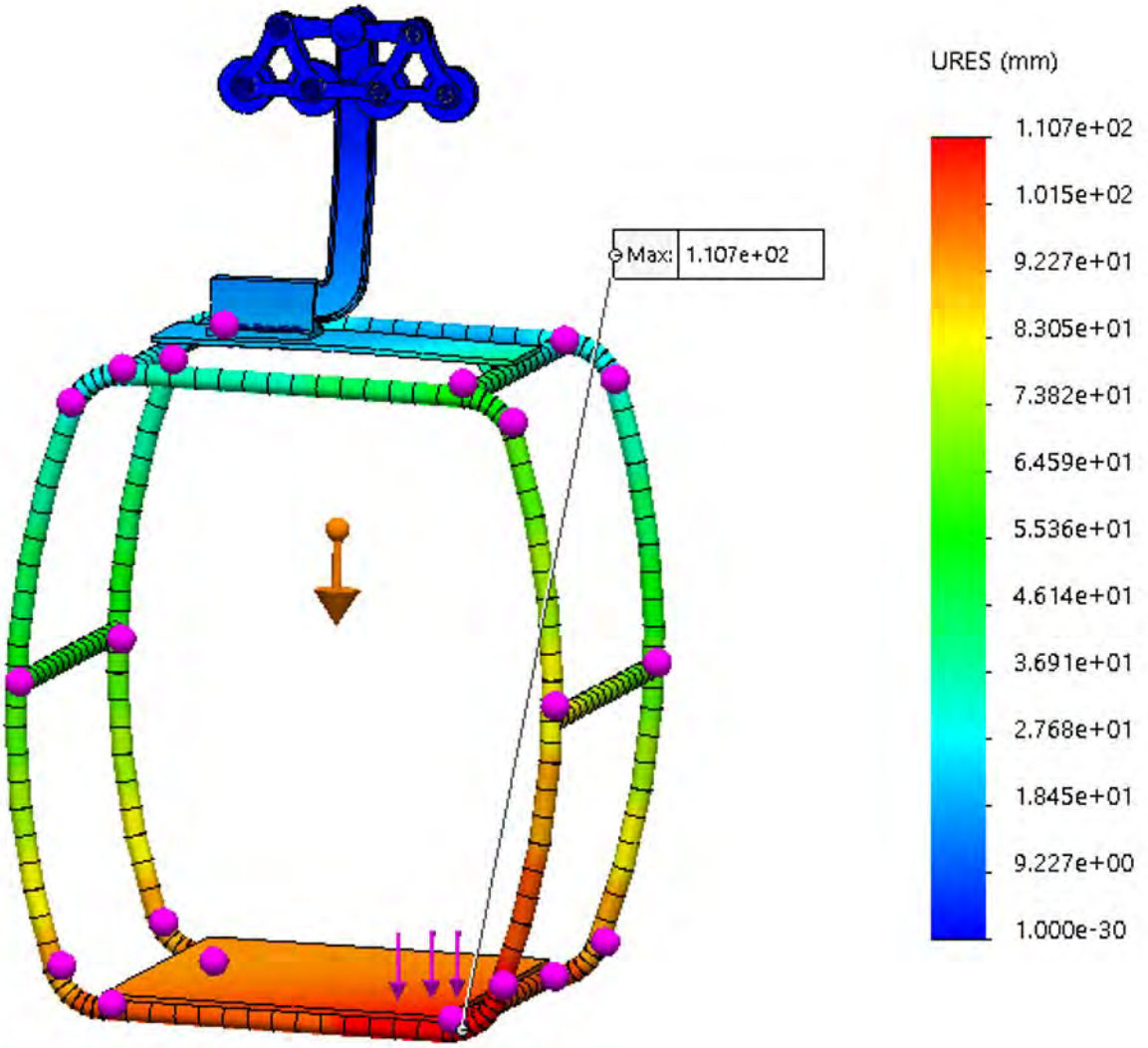
Edited in Photoshop

ECHO
Phantom Pro

Line of speakers inspired by Pac-Man, modelled in Solidworks



SOLIDWORKS

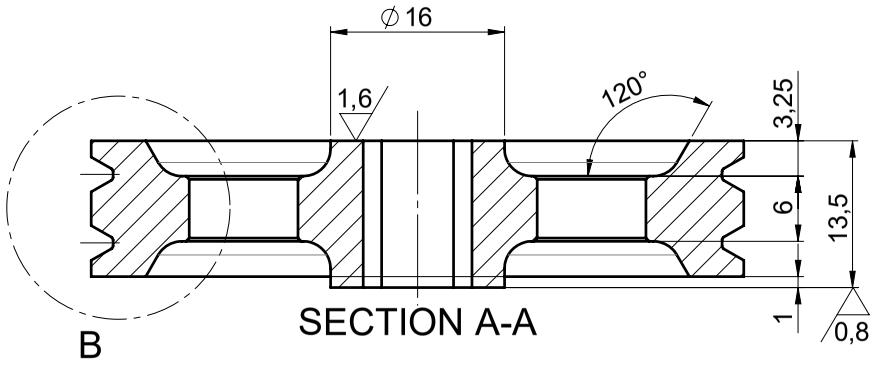


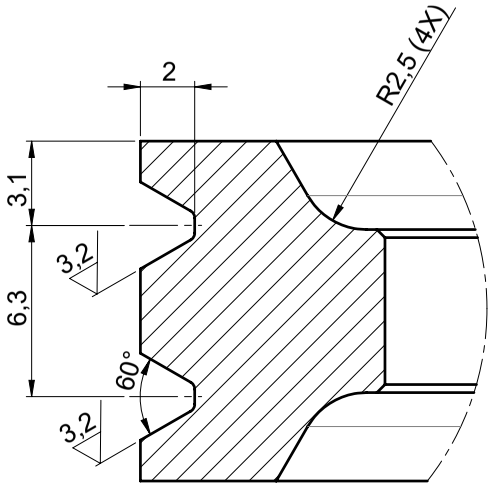
Strenght calculation of a cablecart using Solidworks Simulation

Solidworks is a really powerful tool and I really enjoy using it. I can say I have a good knowledge of the different possibilities CAD-programs like Solidworks offer. I create models using solid and surface features. Organic shapes are no problem (see the dragon on the previous pages). Renders are made using Photoview360 and edited using Photoshop. I can also create animations using this tool. I also have knowledge of Solidworks Simulation to calculate the strength of my designs. When everything is ready for production, I use Solidworks Drawing to create technical drawings following the ISO-standards, completely with tolerances and roughness.

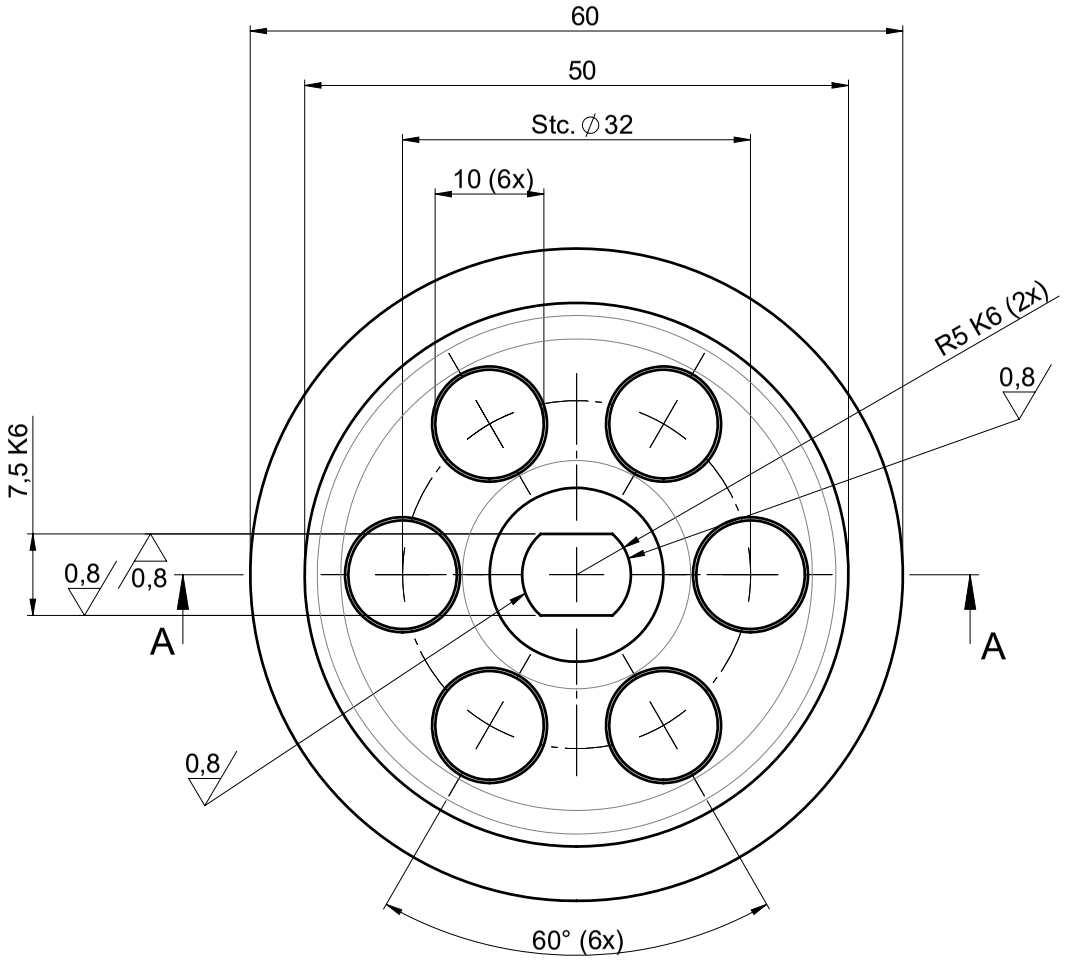
50 / (3,2 1,6 / , 0,8 / ,)

Technical drawing made using Solidworks





DETAIL B
SCALE: 5 : 1



Alle afschuiningen 0,3x45°, tenzij anders vermeld
Alle afrondingen R0,3, tenzij anders vermeld

Rev.	Datum	Omschrijving

Universiteit Antwerpen

	Datum:	Naam:
Get.:	1/06/2020	TDR
Gecon.	XX.XX.XX	XX.XX.XX
Schaal:	2:1	Blad: 1 / 1

Materiaal: GGG80

Algemene tolerantie DIN 7168f

Oppervlaktebehandeling: XX

Oppervlakteruwheid vlg. DIN ISO 1312

Tekeningnummer: 04

xx

Benaming: Vliegwiel

A3

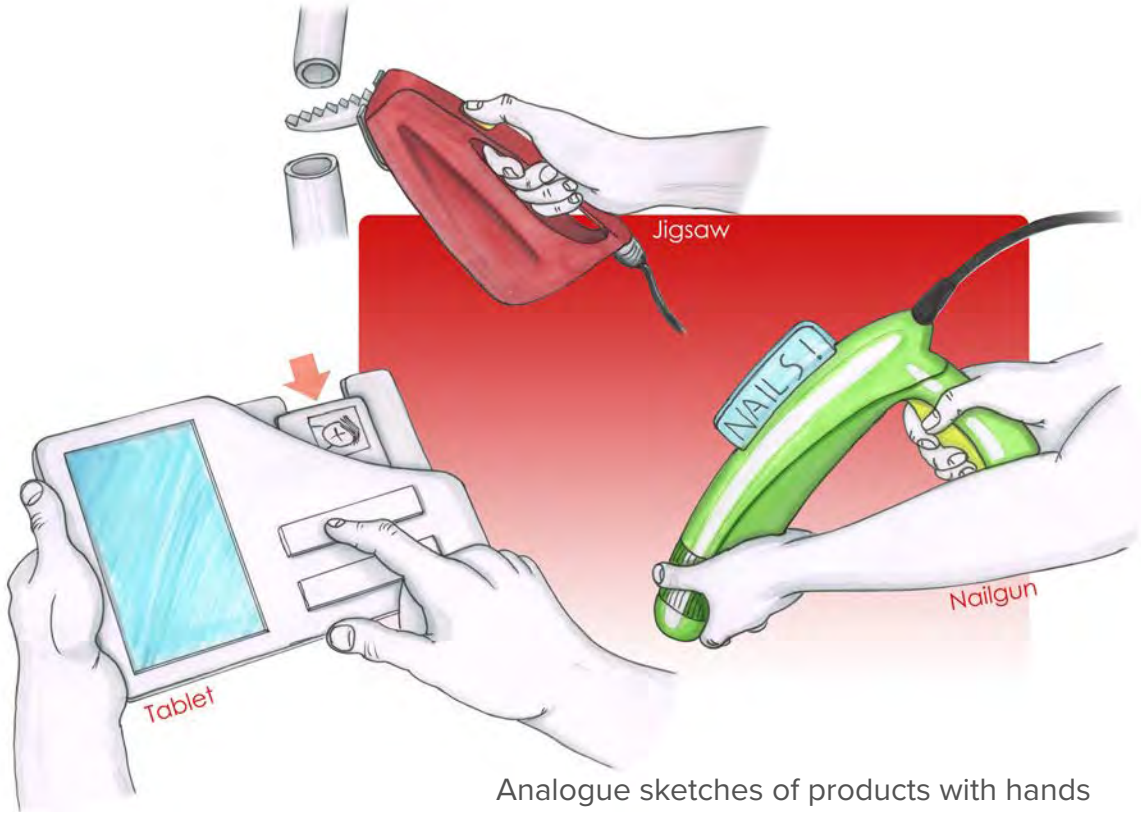
Filenaam: vliegwiel

Massa: kg

Universiteit Antwerpen
Ontwerpwetenschappen
Ambtmanstraat 1
2000 Antwerpen

SKETCHING

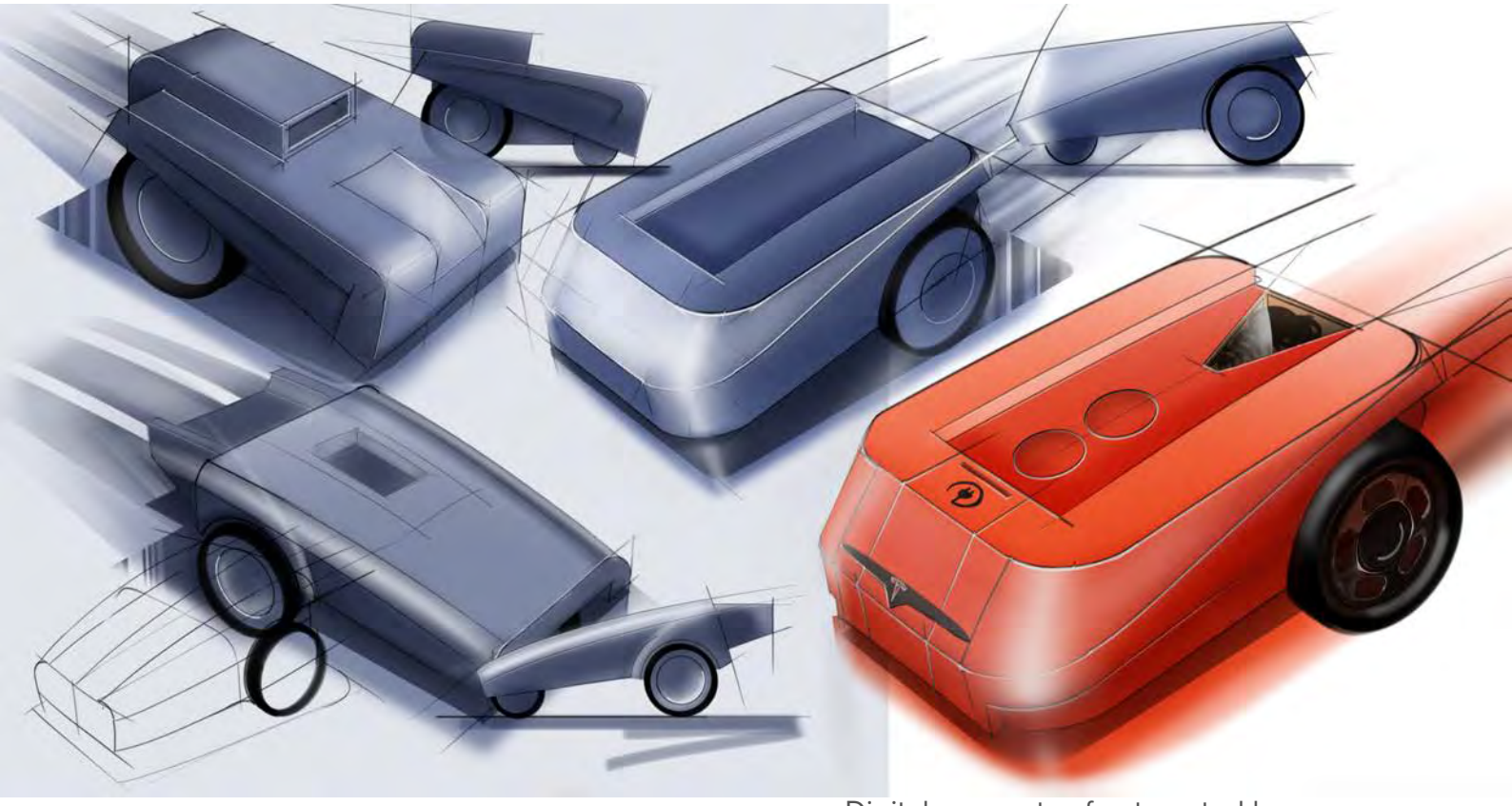
I use sketching on paper to illustrate ideas, principles... These sketches are mostly for myself and not for presentation. I prefer making presentation drawings digitally with a Wacom-tablet because of the fast results, range of tools and the undo-function :)



Analogue sketches of products with hands

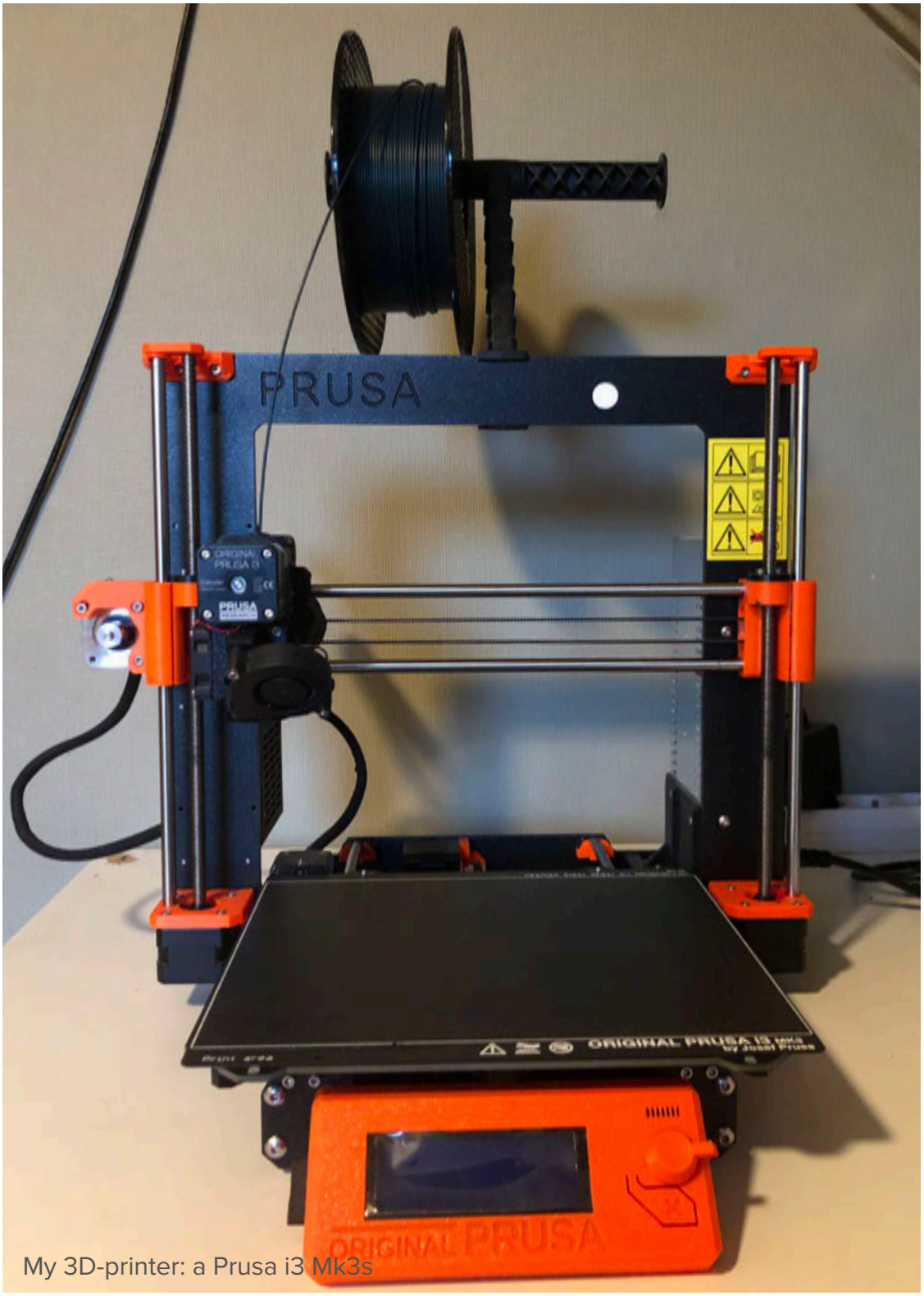
Design sketch of a fly-inspired space cargoship

Digital drawing of an automated fast-food restaurant



Digital concepts of automated lawnmowers

3D-PRINTING



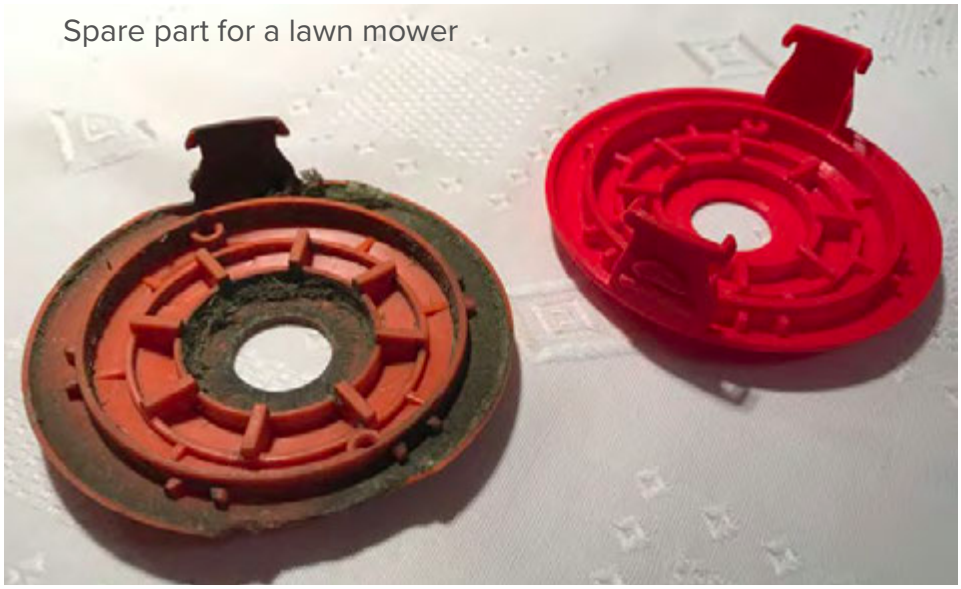
My 3D-printer: a Prusa i3 Mk3s

I am really fascinated by new technologies, innovations and technical advancements. I am inspired by people who push the boundaries of what's possible further. 3D-printing is one of those technologies I find very interesting and with the broad availability, I decided to buy one to get some experience and learn the technology by using it.

I use the printer for projects at the university or at home. After 1600 hours (and counting) of printing, I can say I have some experience with 3D-printing.

The models on the next page where modelled in Solidworks by me and also printed by me.

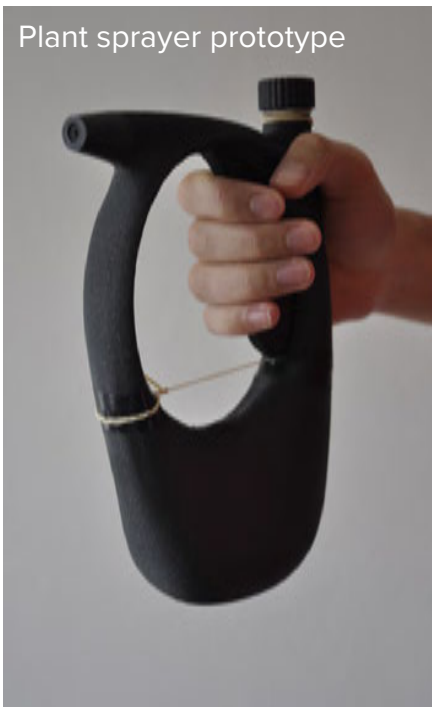
Spare part for a lawn mower



Prototype for Resense (see earlier)

Prototype for the shopping cart (see earlier)

Plant sprayer prototype



3D-printed model of the dragon I modelled in Solidworks