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Ford van tool tracker

CONCEPTING, PROTOTYPING,
RENDERING & MODELING



The project

The Ford Innovation Centre in Aachen examined **tool loss among customers** with Ford Transit vans. Their calculations revealed an **annual loss of 1000 euros** worth of tools per van. To address this issue, they proposed a tracking solution, aiming for a substantial reduction in costs.

Following thorough research and prototyping, my team developed the **Linkey Tool tracking device**. Specifically **tailored for construction companies** and designed to collaborate seamlessly with Ford Transit vans, it offers easy installation, battery replacement, and user-friendly operation.

Throughout the development process, emphasis was placed on crafting a **functional** tracker exterior. We designed a **seamless user and product experience** while implementing energy-saving battery management. Besides that, we designed the end-of-life for increased sustainability.

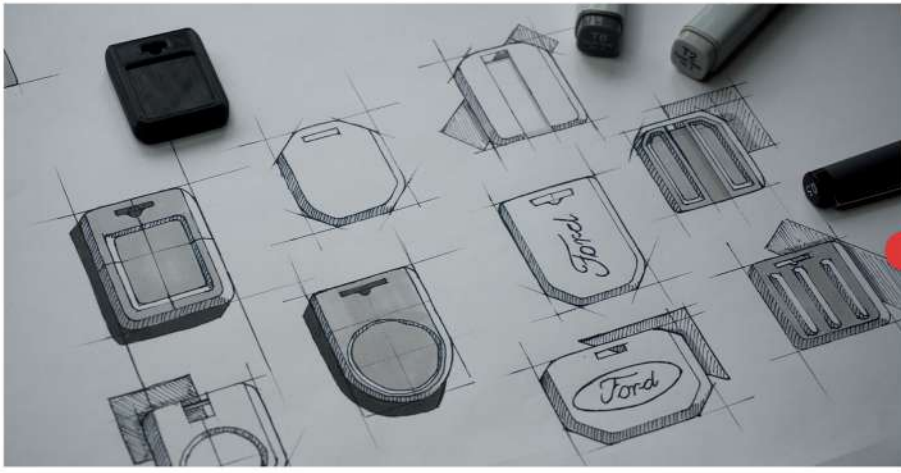


The product

The Bluetooth tracker contains both a QR-code and NFC coil. This, in combination with a user-friendly digital interface allows for **easy pairing** and for quick and easy usage. Users can **enhance productivity** by minimizing time searching for (misplaced) tools, and keeping track of maintenance schedules.

The coin cell battery gives the tracker an average **life span of around 2 years**. We were able to achieve this by implementing an **energy efficient vibration sensor**, that controls the time between output signals. No movement means less signals, and thus lower battery usage.

We designed the casing to withstand falls from 2 meters high, attached to a tool. The rubber seal makes the tracker **IP67 dust and waterproof**. It is designed for longevity, but when end-of-life is finally there, monomaterials and separable components allow for better recycling.



The process

The final product is the result of **several design sprints**, where we researched one or two specific topic. Every sprint was **concluded with a 3D printed prototype**. This process allowed us to dive deeper into important topics while on the other hand keeping focus on the final goal.

Potential **users where questioned** throughout the entire process. Look and feel, attachment to tools and initial pairing where all tested by the relevant target group.

SKIL SCREW RECOGNITION

CONCEPTING, PROTOTYPING,
MODELLING & RENDERING



A. Screw recognition

The screw is put on the holder (1) and your smartphone underneath the lens (2). The screw will be recognized by the Skil app and tell you the type and size of the bit which fits.



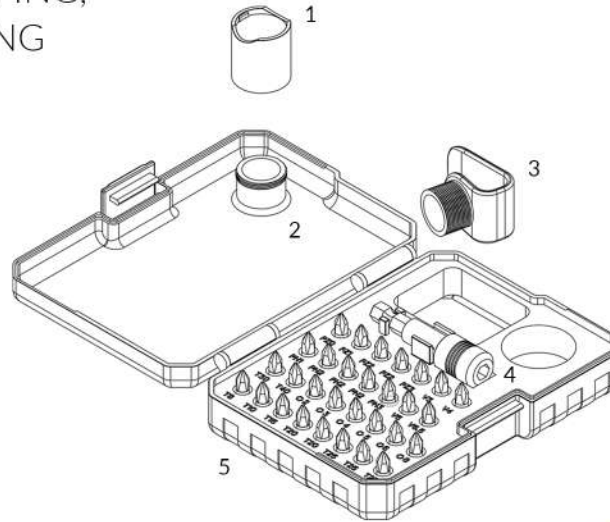
B. Pre-drill advisor

The screw is laid on the lens (1) and is measured by the app software. According to your workpiece material, the app will tell you if pre-drilling is advised and with which size to do so.



C. Phone clip

Do you want to know which bit to use for a driven screw? Simply put the lens (1) on the phone clip (2) and aim it to your driven screw.



1 holder
2 case lens
3 phone clip

4 quick release bit holder
5 thirty most used bits



laurence Knappstein **SKIL**

The project

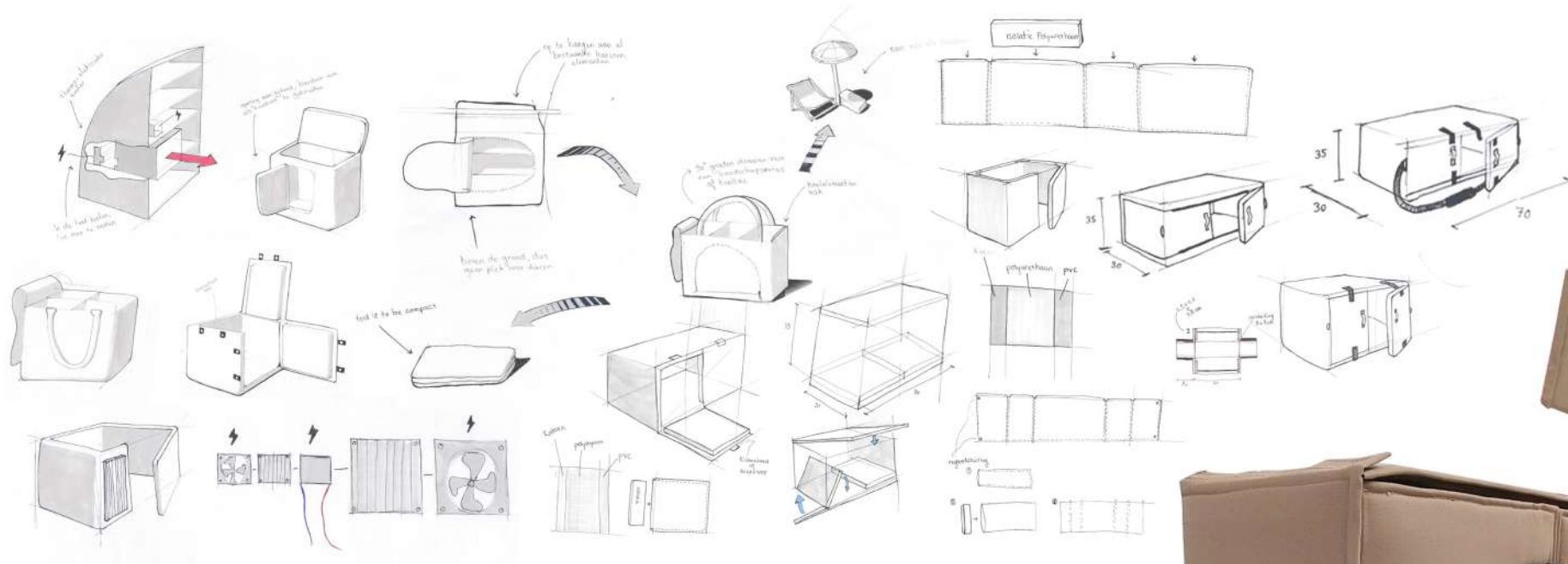
During research and interviews with power tool users I found out that getting the right bit (type and size) for the right screw tends to be a real struggle. When not using the right combination, the chance of destroying your bit or screw is really high, resulting in not being able to finish your work properly.

Since SKIL also talked about their curiosity about AI and computer vision, I designed a product which solves the problem which was found during the research and also gives SKIL insights into the possibilities of using machine learning and computer vision in the power tool sector.

This project was chosen by SKIL to sent to their headquarters in China, to research for further development and the potential it has on the power tool market.

KARSTEN COOLER

IDEATION SKETCHES
AND PROTOTYPING



The project

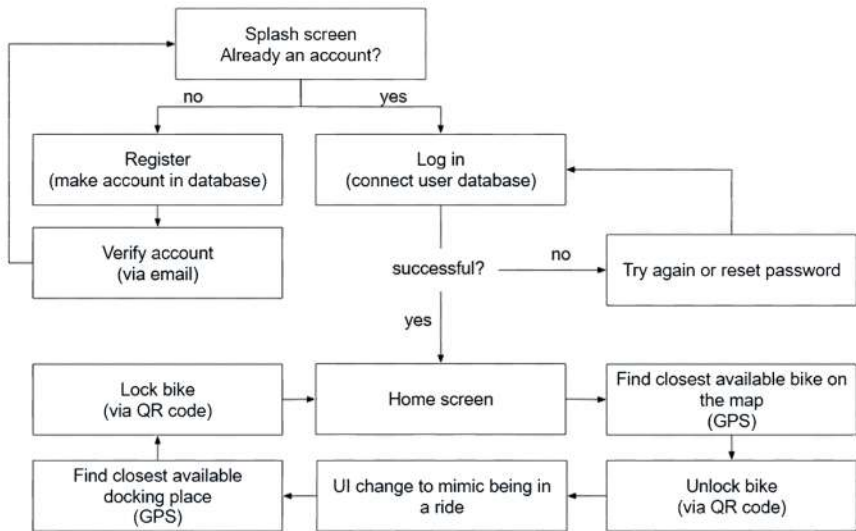
The project consisted of designing a Karsten add-on which would differ them from the market. For the project, I found out Karsten clients were interested in a place to better store their foods during different weather circumstances while camping.

I came up with a cooler bag which would do the trick, completely made from Karsten materials. This solution wouldn't need any investments. Prior to the holiday, you could use the bag as a clothing bag and when arrived at destination, could be used as a cooled cabinet.



UNIVERSITY BIKE SHARING

UX/UI, BRANDING AND CODING



The project

Me and a group of two others made a fully working android application for a university (electric) bike sharing program. It was aimed to help the TU Delft with reaching their sustainability goals. The idea was to support students taking a bike, by giving them a attractive product to use.

I focused on the layout (including logo and icons) and part of the coding. The app is still proudly shown on the homescreen of my phone.



REDLISTED RESCUE

PRODUCT SKETCHING



The **autonomous** Redlisted Rescue carries the heavy **rescue** and medical equipment when you can't. Its **offroad** tires in combination with its **gliders** make sure it can reach any place in the least amount of time.

The project

Redlisted Rescue was a project with the task of drawing an autonomous driving assistance robot. It combined design sketching, computer sketching and photoshop to come to this final design.

It was placed in the exhibition of the 20 best posters of the Faculty of Industrial Design Engineering, TU Delft.