

MOT - Mobile and Modular Table

1 Introduction and background

This is an overview document for the Mobile and Modular Table (MOT) project. A table is a concrete platform, literally speaking. A platform that can hold different things - very much the same way as our hands are able to. A table can be of many different shapes, materials, forms and sizes. Very often they are scaled to the human body - such as writing desks, stools, navigation desks and workbenches. Some are larger to facilitate collaboration and group work among many people, such as meeting room tables.

Most tables are stationary. However, there are ample examples of tables on wheels as well; especially in workshops and offices, where they are able to move horizontally on flat surfaces. At IFL we have office desks that can move vertically, controlled by an up-down switch. In domestic settings, most tables are more or less fixed and stationary, but also here there are examples of homes with furnitures on wheels.

This project sets out to investigate a mobile and modular table. Mobile in the sense that it has wheels and can move by itself. Modular, in the sense that it consists of components that are assembled together. The main modules are: movement module (MM), control module (CM), interaction module (IM), physical module (PM).

Below are two scenarios that open up for seeing potential uses of MOO

1.1 Scenario 1: The mobile phone for safety - and convenience

Even have had a fixed telephone from 1960 to 2009. In 1999, he got a mobile phone - and after 10 years with the mobile phone, he ended the subscription for the fixed telephone.

The fixed telephone was placed in the hall where he lives, fixed to the wall with a cable and placed on a table. In other words, the telephone was stationary, always in the same place - albeit with a long cord so it could be used in the area near the hall. The question of "where is my telephone" was out of the question since it was in a permanent position. The question "is it charged and ready to use" was also out of the question, since it did get power from the telephone lines by the provider.

In 2012 Even got a safety alarm from his children, a wearable device that he keeps on the kitchen table - in case.

The mobile phone is indeed important for safety; it can be used - and are used - for contacting family, friends and other in case there is something. However, the problem of charging - and finding out where they are is challenging. Sometimes the mobile phone was

at the bedside table, sometimes at the kitchen, sometimes in the dining room and yet another time it was in the hall. And one Saturday in January 2019 it was out of battery the whole day, resulting in a visit from a grandchild who lived two hour drive away.

What if...With the MOT, the mobile phone has a fixed table to rest on. The table has a stand for the mobile phone so that it is always charged.

The way he relates to the MOT is that in the morning he calls for it to the kitchen when reading there. During the day, it is sent to the hall, where the fixed phone used to be. In the evening, it is called to the TV room. During the night, he sends it to the bedside - where the MO is charged.

1.2 Scenario 2: A cup of tea

Randi uses a walker at home. In front of the walker, she has a basket with a mobile phone, a book, and some sweets. She makes a cup of tea in the kitchen, and want to bring this cup to the living room.

It is a challenge to bring the cup to the living room for Randi together with the walker without spilling.

What if...she could place the cup of the on MOT, and then walk into the living room with the walker. The MOT could then come after her with the cup of tea and park in a fixed position near her on her command "tea, please".

2. Task suggestions

There are many different challenges that can be addressed for realizing prototypes of MOO - for the various modules. Below are some suggestions for the movement module (MM).

2.1 Review wheels and materials

The wheel meets various surfaces such as wooden floors, concrete, linoleum, wooden doorsteps, metal dorsteps,, free floating carpets, rubber cables etc. Describe the various materials that are used for rims and tires that are used in domestic settings. Briefly describe the qualities of the various materials.

2.2 Review of various ways of mounting wheels to objects

Investigate various ways that wheels are connected to vacuum cleaners, lawn mowers, tables and chairs an other domestic objects. Describe the various principles of connecting the axis on the wheel to the object.

2.3 Making and testing

Make two different brackets for mounting wheels. Mount these in various configurations on the MOT, and test out steering qualities; forward, backward, turn-on-own-axis, radius etc.

2.4 Charging station

Make a charging station for the MOT. Test out the steering toward the charging station.

2.5 Reverse engineer a el-scooter

Describe 2.1 to 2.4 for an el-scooter. Study the various parts...