QUBE – Modular Assembly Cell

INTRODUCTION

- We are the semester 6 project group who worked with the Qube, composed by Arno Masse (Mechanical Engineer), Yasmine Al-Housseini (Embedded Systems Engineer), Ben Waldinger (Embedded Systems Engineer), Eduardo Tersluijsen (Electrical and Electronics Engineer) and Diego Castillo (Electrical and Electronics Engineer). Together, we worked on the Qube, our client is Andràs Ligeti (Senior Engineer), this project was done in collaboration with Qing Mechatronics.
- Our main goal for this project was to develop a sound, functional version of the Qube that kept efficiency, functionality and modularity in mind, so far all of that has been achieved, all that is left is to order.

JOURNEY & LEARNINGS

- Thankfully, there were not many setbacks, the most notable setbacks we have faced have mainly had to do with scheduling conflicts and communication issues, but all went well at the very end.
- We learned a lot about multidisciplinary work, learning how to keep each engineering discipline in mind when making decisions regarding the project and the systems.

OUTCOME & IMPACT

- We have designed a revamped version of the Qube, which is the most space efficient, modular and advanced (in comparison to previous designs), with a fully accounted for bill of materials and comprehensive 3D models showcasing the different modules that are implemented in it.
- As a lot of the design work has been completed and accounted for, the following groups will focus on building it with the materials we have arranged for them, stepping ever more closely to a fully functional assembly line.

• Our most important advancements to showcase would be our realistic 3D model of the Qube that implements the different modules in a visual representation of the Qube, the functional software developed by our embedded systems engineers and the optimized as well as the new circuitry developed for the Qube.

