European Project Semester

PROJECT OUTLINE

Project dates: March – June 2022

Title: Economic measuring arm

Project activity areas:
CAD design, Electrical engineering, Computer coding, Mechanical design, 3D printing, metrology

Keywords:
measuring arm, mechanical design, Onshape CAD, 3D printing, software design

Tutor's name and coordinates
End-client: Eliorys (website: https://eliorys.com)
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Project origin
Response to a request from the "SOFIP" client on behalf of the "ELIORYS" company

Project technical background:

Commercial measuring arms allow high measuring precision but these products are really expensive.
Moreover, our customer does not need a great precision of measurement.
The client, Eliorys (which is a company created in 2005 specialized in Mechatronics), thinks that it would be possible to create a more economical arm to fulfill his need.
In addition, our client, who already owns commercial measuring arms, finds that they are often broken down.

The goal of this project is to design and produce a measuring arm made up of 6 axes with 6 encoders to recreate a point cloud coming from a sensor at the end of the arm.

Studied topics:

- Needs study
- Proposals for design solutions
- Creation of the digital model on "Onshape" software (CAO)
- Choice of encoders and acquisition card
- Creation of processing software
- Realization of parts in 3D printing
- Ordering and purchasing standard parts
- Assembly and tuning of the system.