

**SERVIÇO NACIONAL DE APRENDIZAGEM
INDUSTRIAL**

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3D PRINTER DRONE FRAME - Report. 02

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1 Introduction

In the last month, the design 02 of the clover frame was developed and tested, this design after going through a series of tests was evaluated as incomplete by our team, requiring changes.

Design 02 presented many vibrations and other structural characteristics that required changes as they did not facilitate the assembly and exchange of parts.

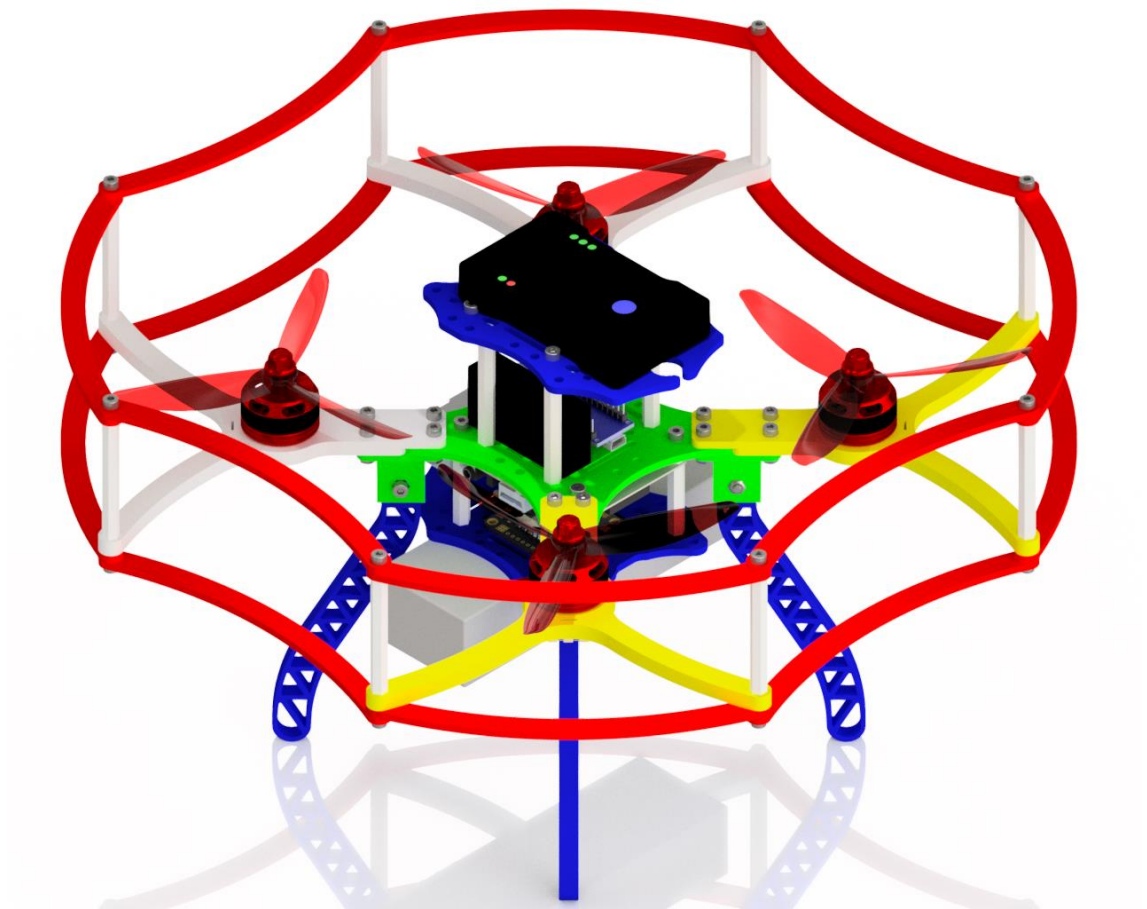


Figura 1 - Frame design 02

in addition to the improvements already identified, it was also noted that this model used a large amount of screws, which made it difficult to assemble and increase the weight of the set.

2 Development of Frame design 03

for the development of the new frame design our team outlined some objectives in order to improve the negative points of the old designs, these objectives are:

- elimination of vibrations
- minimization of screws as fastening elements
- follow the designs of the latest models of the clover drone
- mass reduction

In order to achieve our premises we decided to change the design method to follow the drone projects already thought, developed and tested by the COEX company, and to make only changes that we think are pertinent to improve some aspect and changes necessary to enable the printing and correct functioning of the set.

To accompany this idea we use drawings and images available in the online manuals of the company COEX on its website, in order to be used as a model to develop the new design

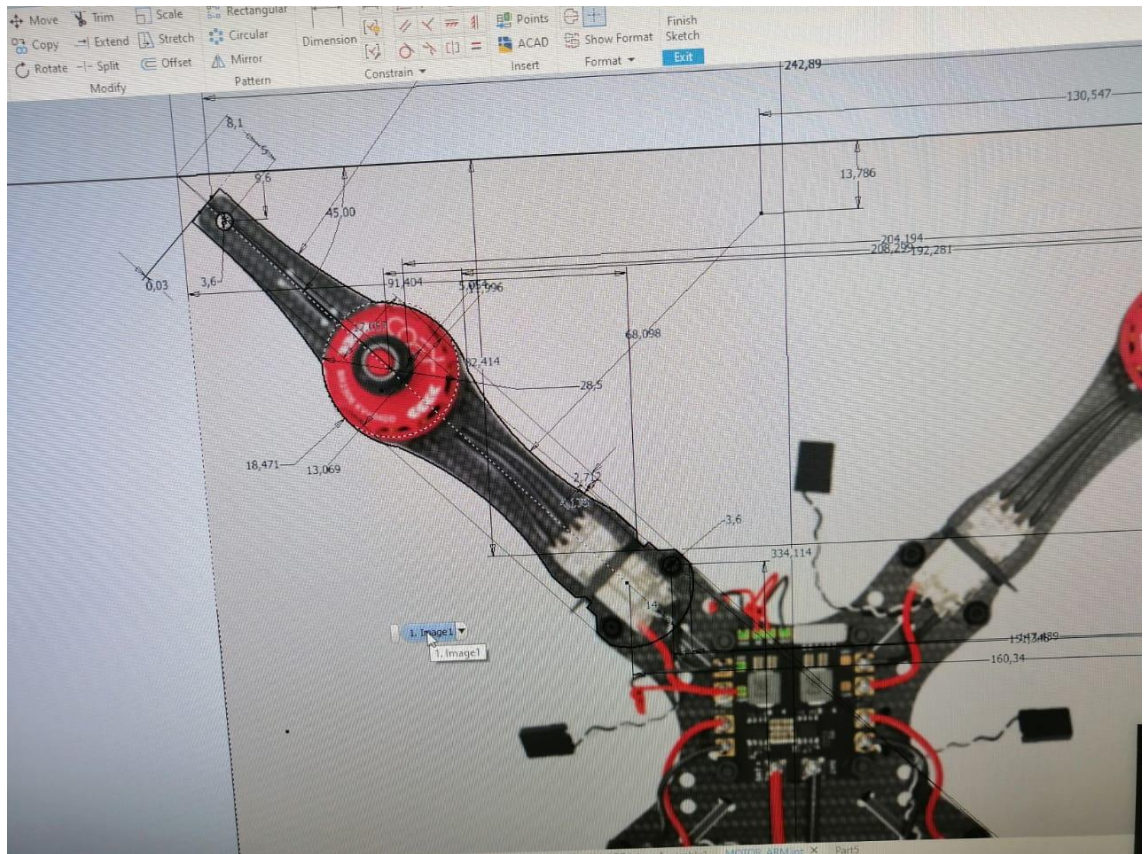


Figura 2 - frame design development 03

2.1 3D Modeling

using visual references from other more current frame models it was possible to model most parts with ease. thus enabling the assembly of a new frame design based on clover 4 and clover 4.2,

after the frame modeling process, the electronic components were added to check the usability of the frame and check if it can hold everything necessary.

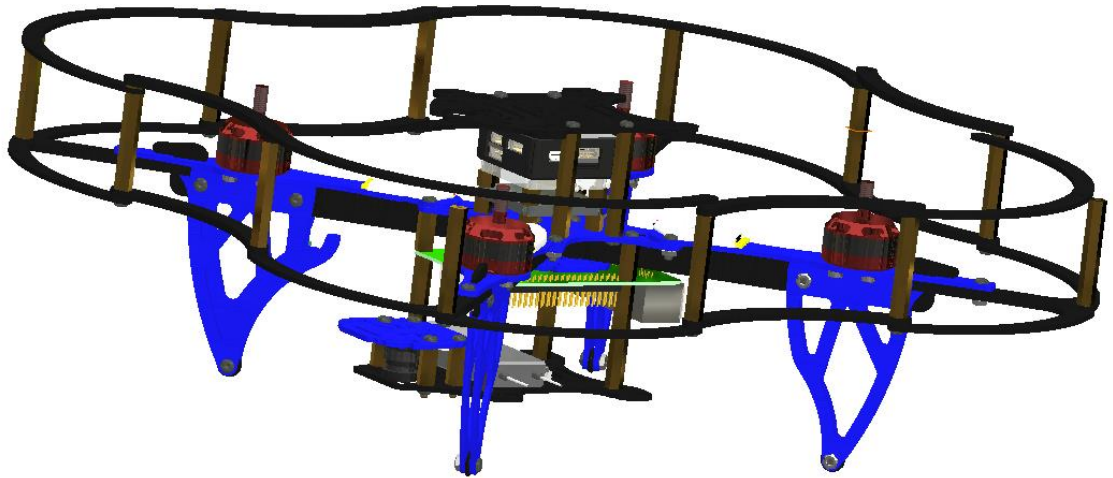


Figura 3 - Frame design 03

It was attested that the modeling and assembly was a success, and the projected frame has the capacity to accommodate all the necessary components, so we started the process of adapting to the additive manufacturing processes, to ensure that the frame model can be produced by this process and will still be functional and efficient.

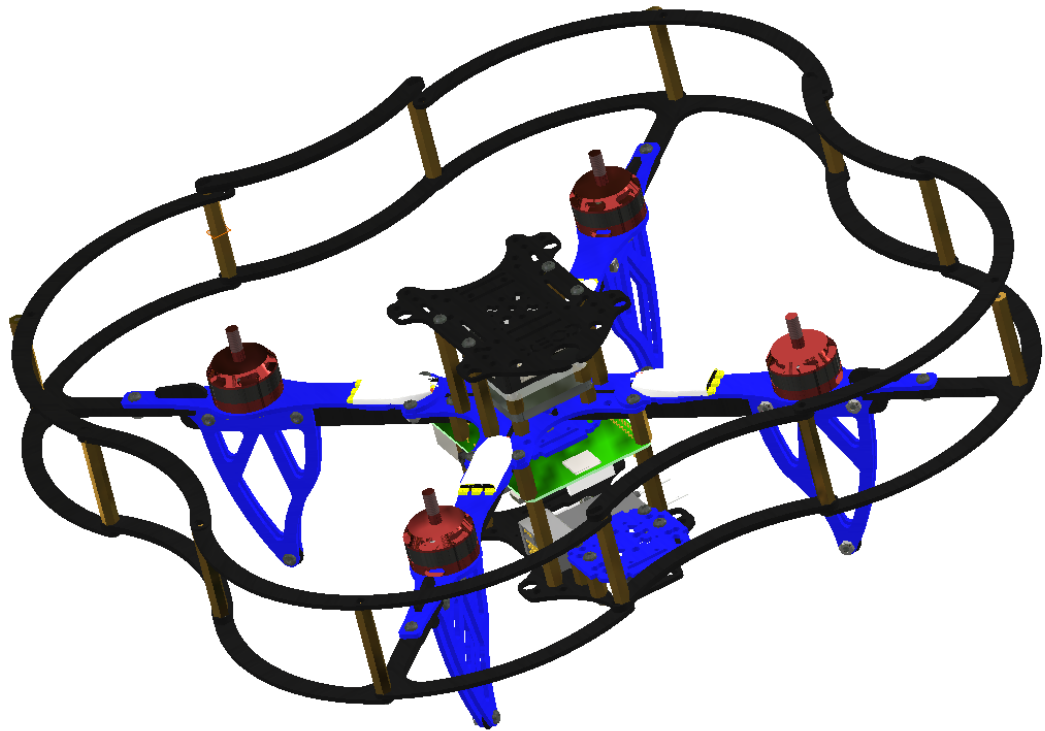


Figura 4 - Frame design 03 adaptive

3 Nest steps

After the adaptations and changes are made to the new drone design our team started its production using the additive manufacturing process, the material and configurations that will be used will be the same as the other designs, after the production we will assemble and prepare for physical tests.