

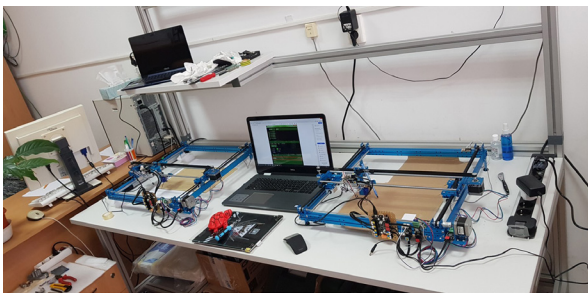
## INNOVATIVE MECHATRONIC DEVICES FOR RECONFIGURATION AND REUSE OF PACKAGING

### Goal of the project

The basic idea of the project is to create and develop a mechatronic device to reconfigure a packaging of conventional materials which, until its recycling can be reused for another purpose.

### Short description of the project

The packaging reconfiguration device is supposed to be a small flexible manufacturing cell composed of an adaptable “two-coordinate pen plotter”, to which we can also associate a knife with which, after tracing the ways for reconfiguration, we can cut the areas in which the packaging will fold.



### Implementation period

21.11.2017 – 31.12.2018

### Budget

46.500 RON (10000 EUR)

### Main activities

- Identifying the components needed to achieve the device, determining the best acquisition costs.
- Modular design of the devices provided in the project.
- Studying the variants developed for the purpose of choosing a first prototype variant of the device.
- Testing the obtained devices, determining the optimal working parameters.
- Identify, test and establish CAD/CAM/CAE modeling software that best fit in the packaging modeling phase for reconfiguration and reuse.
- Possibility to carry out practical activities with the devices designed and the possibility to develop related laboratory applications.

### Results

- Determining the optimal technical solution to meet the required requirements.
- Drawing up a list of the main components of the stand/device to reconfigure the packaging.
- Choosing the most advantageous offer.
- Determining a first virtual version of the work device, testing the device and choosing the type of packaging involved.
- Depending on the virtually developed solutions, choosing the best option.
- Testing the device with which we reconfigure the packaging, calibrating it to the optimal working parameters for the different packaging ranges under reconfiguration.
- Attempts to see the device's behavior at work, determine possible errors in operation, and determine how to correct them.
- Conceiving, structuring and drafting the technical documentation containing the working methodology of the devices proposed in the project.

### Applicability and transferability of the results:

Designing laboratory work related to disciplines in the Department of Mechatronics and Robotics. Preparation of laboratory work. Making a teaching material with the right steps in using and working with this device.

Developing and other applications that are suited to working with our stand equipment.

### Research team

Eugen S. ZĂBAVĂ, Project Director  
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