**Project**

**Title:** MULTICOLOR DIGITAL PEN

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**Introduction:**
For more than a decade, there have existed so-called “digital pens” that not only write on paper like any other pen, but also help capture the handwriting in digital form and send it to a computer. These digital pens work with a printed dot pattern.

These pens have only one ink color, so people who want to differentiate information should buy more than 1 pen (which are quite expensive) in order to get this advantage.

**Project Brief:**
The objective of this project is to design a multicolor digital pen that holds up to 4 colors and can connect the physical color with the one that is shown in the UI application. That means that each time that the user changes color, the overall system has to have the intelligence to reflect exactly the same in the physical and in the digital world.

Ink type is also important; it should be like a fluorescent marker.

**PREDEFINED ASSUMPTIONS:** The pen works with Bluetooth and a dot pattern already designed.

**DELIVERABLES (WHAT):**
- Mechanism for changing color in the pen (HW)
- Mechanism for sending the information of the color to the computer (FW)
- Industrial Design of the pen integrating the 4 colors and mechanisms.

**DELIVERABLES (HOW):**
Intermediate review: 3D of the mechanism for changing colors and the sensors for the actions
- Electronics diagrams of the design
- ID sketches and renders for internal and external shapes.

The final outcome of the project should be a prototype, scale 1:1, where all this functionality is included.

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**Company**

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**Project team:**

**Number of students:** 4 to 5

**Students speciality:**
- Business Management
- Mechanical engineering
- Electrical engineering
- Electronics engineering
- Chemical engineering
- Computer engineering
- Telecommunications engineering
- Design
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