

# DeciZebro

The design of a modular bio-inspired swarming robot optimized for series production

## Meet DeciZebro!

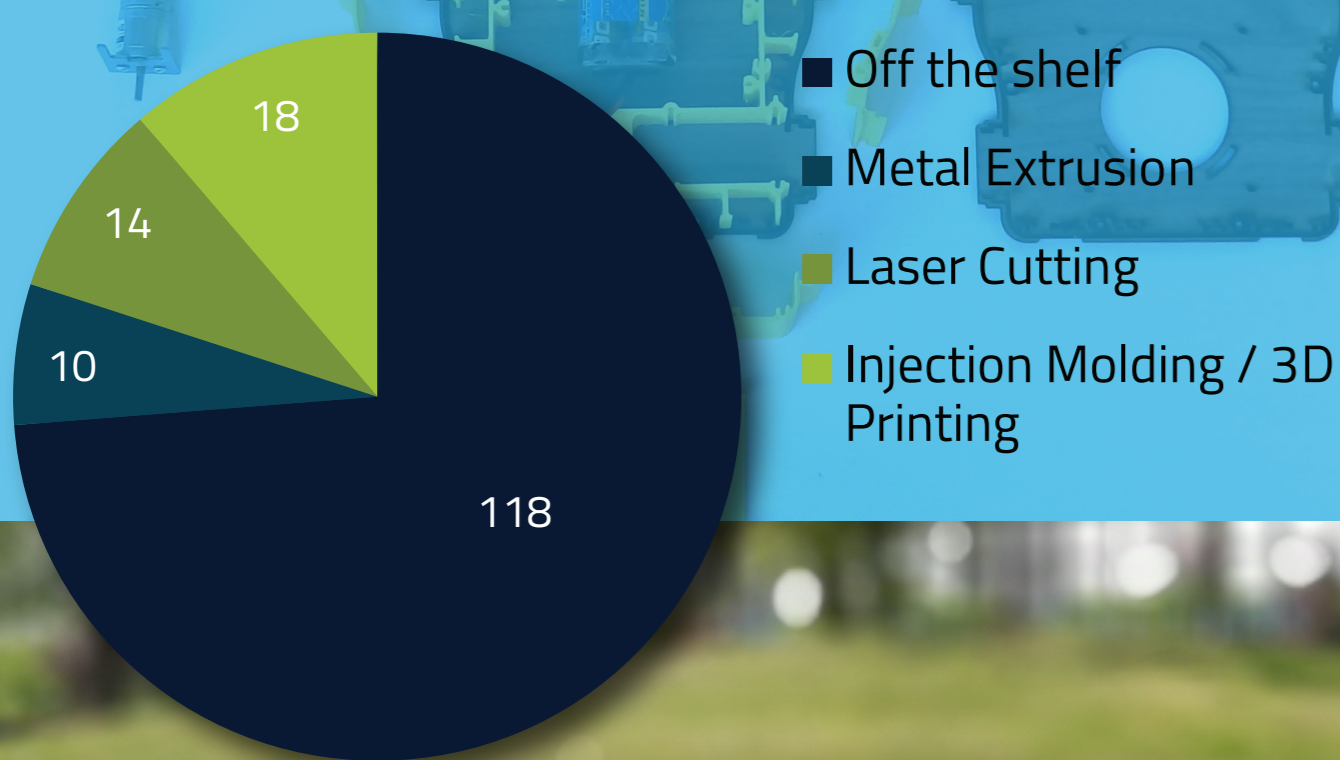
DeciZebro is a robot that is **built for swarming**. Like a flock of birds, or a colony of ants. By **working together**, Deci can help bring robotics to our **everyday society**, just like animals are a part of our everyday lives.

DeciZebro is meant to become an autonomous robotic platform that operates on **simple instructions**: do not come too close to other Zebro's, and do not stray too far. In between, **explore!** If multiple Zebro's meet each other, using these simple commands, they create an **organic swarm** capable of exploring rough terrain. Applications include robotic and coding education, but also using Zebro's as **wireless mobile sensor networks**.



## Deci is designed for series production

Deci consists of 153 parts. Each product specific part has been optimized for series production. Because of this, DeciZebro can become the first series-produced robot worldwide to be suitable for autonomous swarming. Deci is ready for metal extrusion, laser cutting and injection molding processes



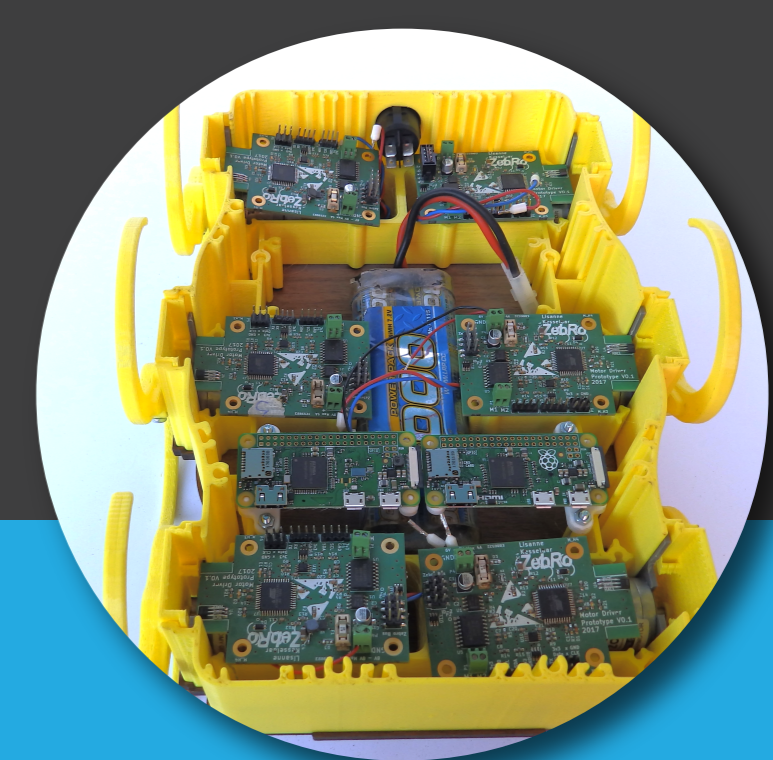
## Deci is designed to be modular

Deci is built up like Lego. All parts click together. The 6 DC Motor Modules are slid in and out to allow easy repair. In this way, the robots stay simple and are easily adapted to new situations. Anyone can open up Deci and change things or add new modules.



## Deci is cooperation

Deci is about industrial design. But it's also about electronics. It features 9 printed circuit boards with over 500 electrical components on them in total. It also features an internal communication protocol and swarming algorithms. Deci shows how industrial design can bring together many engineering disciplines into an integrated product that works. Not only on the inside, but also on the outside.



## Deci is designed give new meaning to robotics

Why should robots be human? Deci takes a new approach. By behaving like an animal, it shows us robotics can be social and fun. But not only that, it can be very practical too. Deci can autonomously explore large areas of rough landscape and, equipped with sensors, provide us useful information in tough conditions!

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DeciZebro: The design of modular swarming platform  
04-07-2017  
Integrated Product Design

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