WeLASER
Eco-innovative weeding with laser

Robotization of agricultural tasks

Problem Statement

The automation of a production process usually requires modifications to the process itself and its environment. In some sectors such as agriculture, the process depends mainly on natural factors, which follow their own laws, and the work environment, which is difficult to modify/adapt. In this case, prior actions are required to facilitate the automation of processes, which are usually carried out using implements capable of performing a set of tasks: data collection, fruit collection, and application of treatments, among many others. These implements require the use of vehicles. The automation of these processes consists of the automation of both the implement and the vehicle, which becomes an autonomous robot that requires a set of previous actions to operate, focused on the following practices.

Practical actions

In the first place, the shape of the field and its dimensions must be determined, known as **the work field's layout**. Next, a detailed map is generated that clearly identifies all the intrinsic characteristics of the land: location, type of land, extent and data related to cultivation, etc. This activity is called **field map generation**. The next step is the **generation of the mission**, which consists of defining the set of tasks that must be executed to complete an operation automatically. And finally, it only remains to facilitate the farmer the **execution and supervision of the mission** that is carried out with a simple and easy-to-use user interface. These practices are detailed in PA-48 through PA-51.

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