

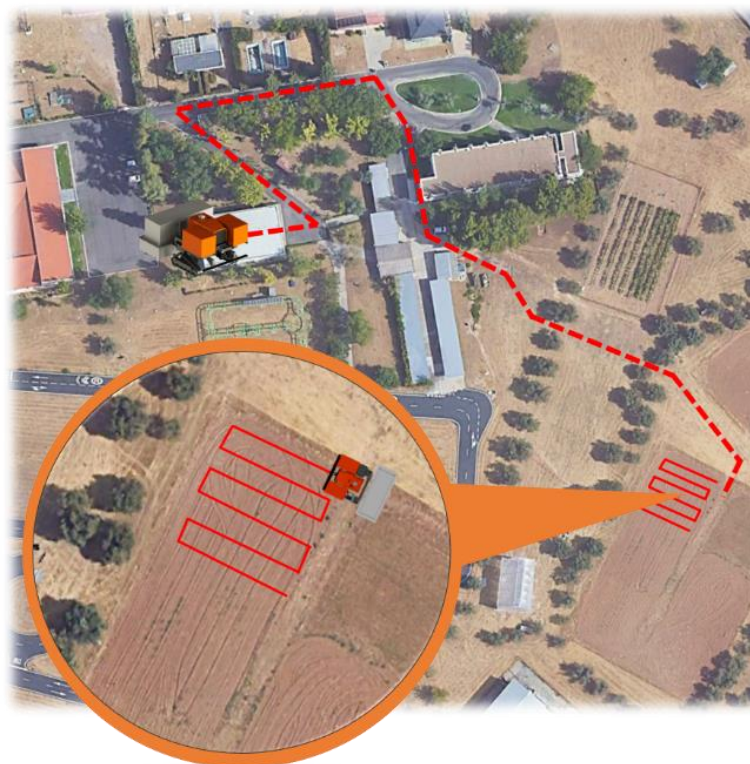
## Generating missions with WeLASER

### Problem Statement

By the mission of an autonomous robot, we understand the set of tasks that must be executed to complete an operation automatically. These tasks may include data collection, fruit collection or the application of a treatment, for example, weed management. Optimising time and energy on an agricultural mission is crucial to obtaining good profitability, and therefore, the mission must be carefully planned. Because the farms are usually oversized and irregular and can present obstacles, planning efficient routes for autonomous navigation is complex, but computer applications offer exciting alternatives.

### Solution

WeLASER proposes a solution that helps optimal route planning within a farm using intelligent algorithms, which allow handling data structures similar to maps. This is achieved by considering key factors such as the location and shape of roads and obstacles, the task duration, the estimated energy consumption and the speed of operation.



### Practice recommendation

For the agricultural robot to perform a mission efficiently, it must first collect accurate data on the work area by following the mapping procedure described in PA-48. Once the field map is known, WeLASER automatically calculates the tasks and routes that make up the mission. It is recommended to customise the mission planning based on the farmer's needs, changing weather conditions and crops, and tracking the robot in real-time in the execution of the mission.

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