

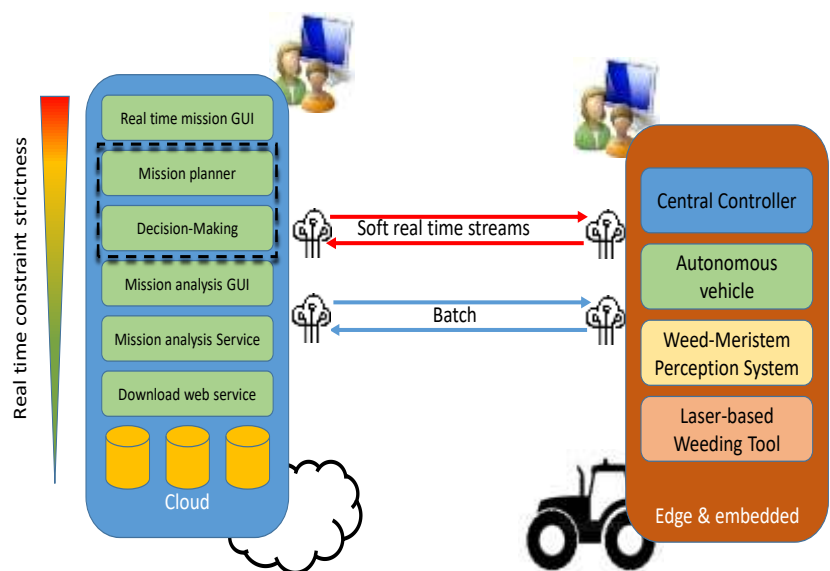
## Cloud Computing in robotic systems for agriculture

### Opportunities

Cloud computing is the infrastructure an IoT system is based on. It enables the integration of data from disparate sources and integrates them to environmental, field and machinery observation. It also provides scalable computing power with reduced management effort. Easy data ingestion, data integration capabilities and unbounded computing power are the basis of any on-line service including IoT, dashboarding, and AI analytics. Such technology is used in agriculture, including weed recognition and robotic driving.

### Solution & expected outcomes

Data ingestion technique and storage systems depend on the IoT device and data features; on the other hand, an interface must connect the cloud platform to other technologies in use (ROS and FIWARE). Different data functionalities will be implemented including data downloading, time behaviour monitoring, and off-line analysis. Data will be ingested from on-board cameras for adjusting/verify the efficiency of WeLASER systems. Long time series will come from field sensors to monitor the crop and environment to improve row weeding and verify soil properties.



### Practical aspects

We have started the analysis of the related literature and the evaluation of architectural alternatives that consider available technologies including network coverage in the involved countries, sensor powering placement and connectivity protocols. Boards and platforms for IoT have been tested and their costs and interfacing options assessed.

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