Service ID   S00209

Location   At user's premises, France

Provision of general-purpose datasets via multisensory ground robot

Provider service

National Institute for Research in Digital Science and Technology (INRIA)

Link to content

https://agrifoodtef.eu/catalogue-of-services/provision-general-purpose-datasets-multisensory-ground-robot

Type of Sector

Arable farming, Food processing, Greenhouse, Horticulture, Tree Crops, Viticulture

Accepted type of products

Other

Type of service

Data analysis, Data augmentation, Desk assessment, Provision of datasets

Description

General-purpose datasets serve two primary objectives: (i) evaluating mobility algorithms and (ii) developing and assessing general-purpose AI applications. In the context of mobility algorithms, this pertains to classical robotics tasks such as mapping, localisation, SLAM (Simultaneous Localisation and Mapping), and navigation. Meanwhile, general-purpose AI applications focus on advancing algorithms and feeding decision support systems (DSS) for tasks such as, but not limited to, weed detection, health monitoring, growth and maturity assessment, and yield estimation in areas like arable farming, horticulture, food processing, forestry, and tree management. A significant challenge in developing AI solutions for agricultural robotics lies in the dynamic nature of agricultural environments, which fluctuate with different seasons and weather conditions. To address this, acquiring consistent and periodic data is essential for monitoring these changes effectively. This real-time data collection, often facilitated by ground robots, is crucial for developing efficient algorithms and AI solutions. Such datasets can support the development of sensor-specific techniques or be leveraged to create multisensory algorithms, enabling more accurate and adaptable systems for agricultural applications.

How can the service help you

Our service provides you with high-quality datasets to improve your decision support system (DSS). Without reliable data, it's hard to give farmers accurate recommendations for tasks like planting, watering, fertilising, and harvesting.

With our datasets, you can make smarter, data-driven decisions. This helps farmers optimise their resources, reduce waste, and improve productivity. In short, we give you the data you need to create better and more effective solutions for agriculture.

How the service will be delivered

Our service offers fully customisable equipment, sensors, and environments tailored to the customer's needs. However, there may be technical limitations related to sensor compatibility or system performance, which will be addressed during the planning phase. Additionally, customers should be aware of any legal or regulatory requirements that may impact the solution, and we will ensure compliance throughout the process.

Service customisation

Our service provides documented datasets, including raw or processed data and analytical reports (if necessary). As data collection is season-dependent, customers should contact us at least two months in advance. Depending on the requirements, it may take weeks to 2–3 months and might require repetitions.

The service could be made available at various locations, subject to the customer's requirements, terrain, weather, and access permissions. Customers receive the requested dataset with a report, but they must provide clear data requirements and necessary permissions to ensure smooth execution.