Service ID S00379

Location France

Global Safety Evaluation for Autonomous Robots

Provider service

INRAE

Link to content

https://agrifoodtef.eu/catalogue-of-services/global-safety-evaluation-autonomous-robots

Type of Sector

Arable farming, Greenhouse, Horticulture, Livestock farming, Tree Crops, Viticulture

Accepted type of products

Design / Documentation, Physical system, Software or AI model, Other

Type of service

Desk assessment, ELSA assessment, Test design, Test execution, Test setup

Description

Ensuring that agricultural robots operate safely and comply with regulations is crucial for gaining market acceptance and managing risks. This service provides a design folder evaluation of robotic systems according to selected standards (ISO 18497 - ISO 25119 - ISO 13849...), emphasising: Risk assessment: Check and advise on the consistency of the manufacturer's risk assessment concerning the use of the autonomous machine in relation to its field and operating environment. Evaluation of functions and technical choices to cover risks Verification of the validation plan, including physical tests, and of the entire safety file This service provides an external, third-party assessment to identify potential gaps, anticipate certification issues, and enhance the overall safety concept, giving the manufacturer the confidence to self-certify or obtain approval for the autonomous vehicle in accordance with the applicable regulations, such as the Machinery Regulation 2023/1230.

How can the service help you

Our service provides a competent third-party perspective on the safety analysis of agricultural mobile robotic systems. Before using the service, customers may have doubts about designing a safe and compliant integrated system and may lack experience with safety architectures and certification requirements. Our service provides the necessary expertise and advice, freeing you from these uncertainties and guaranteeing a safe, compliant system. At the end of the service, customers receive a safety analysis of their autonomous machine and recommendations on how to improve their design (hardware and software), their validation plan, and the consistency of their safety documentation. This document clarifies which safety risks and compliance tests should be addressed.Following the assessment, you will receive a detailed safety evaluation that identifies key risks and compliance gaps, along with expert guidance.

How the service will be delivered

This comprehensive evaluation is expertly tailored for the agricultural applications of each robot, considering its specific characteristics. By adhering to the manufacturer's chosen standards and regulations, our method ensures reliability and safety. It provides insightful recommendations on crucial aspects, from thorough risk analysis to informed technical choices and robust validation plans. With this expert evaluation of the robotic system's design files, developers not only enhance their safety knowledge but also gain the confidence needed for the reliable operation of their machines.

Service customisation

The assessment includes familiarisation with the operation of the robotic system and the operational design domain by INRAE's experts.

Inputs required from the customer: To ensure practical expertise, access to project documentation and a representative from the development team is necessary.

The customer is required to provide the following information:

• Safety design file and architecture diagrams,

• List of safety-related components,

• Draughted or completed a risk analysis,

• Draughted or completed a test and validation plan,

• Applicable standards and intended certification goals.

• Etc. Delivery format: • Remote assessment (standard)