



82nd Commission Session

Panel Discussion on Smart Mechanization for Shifting Agricultural Demographics

*Integrating new technologies into agricultural mechanization
to address the changing demographics of the agriculture workforce*

AGRICULTURAL ROBOTS WITH SAFETY ISSUES: TRACTORS AND AUTONOMOUS MACHINES / VEHICLES

Name
SURNAME

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Chair of OECD SWG on Agricultural Robots



Rural Development
Administration



CSAM
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Agricultural Mechanization

Mandate



Name: Sub-Working Group on 'Robot' tractors/Autonomous Machines. To exchange information on actual developments in agriculture, industry, research, etc.

➤ *To monitor the work of ISO TC23 SC19, Agricultural Industry Electronics Foundation, European Commission, relevant United Nations bodies, and CEMA to avoid duplication of work.*

➤ *To evaluate and align with ISO 18497 work (especially the Part 4 work), avoiding duplication of work (standards) and ensuring value for money to manufacturers and end users (farmers).*

➤ *To consider issues hindering the development and use of this technology in various use cases (on global or regional level)*

➤ *To develop repeatable and reproducible laboratory in- / out-door tests ➤ To draft a common test code, focusing on minimum requirements, for tractors as*

defined in Code 2.

Key Principles: Voluntary tests, No double testing, added value for industry, contribute to global trade.

Türkiye is the Chair, Japan, and France the vice-Chairs and the Co-ordinating Centre will assist on technical matters.

Close collaboration with : AEF, CEMA, EC, ISO, RobAgri.

Open to OECD and non-OECD countries.



Rural Development
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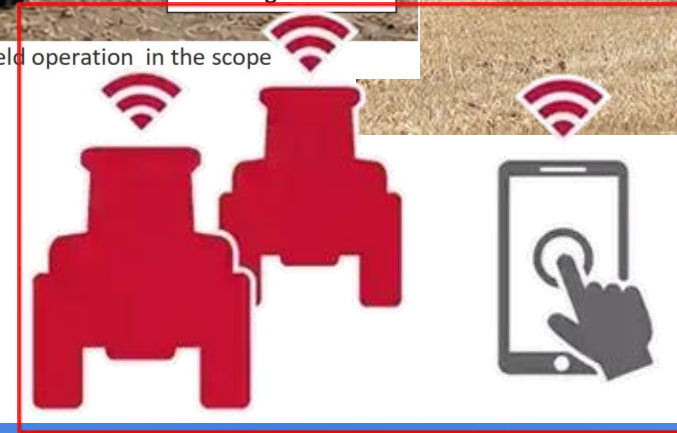


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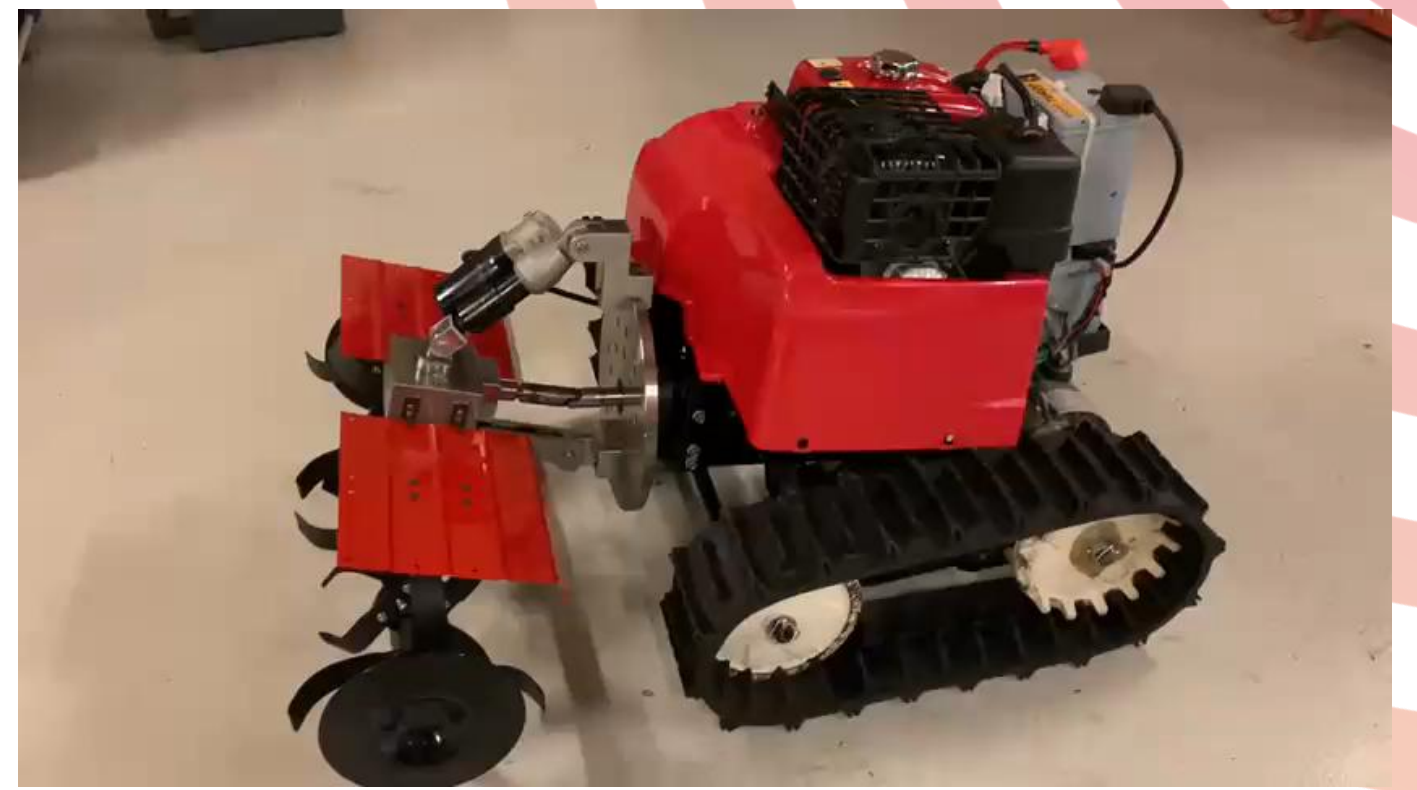
Some examples from OECD side



AI generated
Figure 1. Autonomous tractors for open field operation in the scope



Some examples from Turkiye



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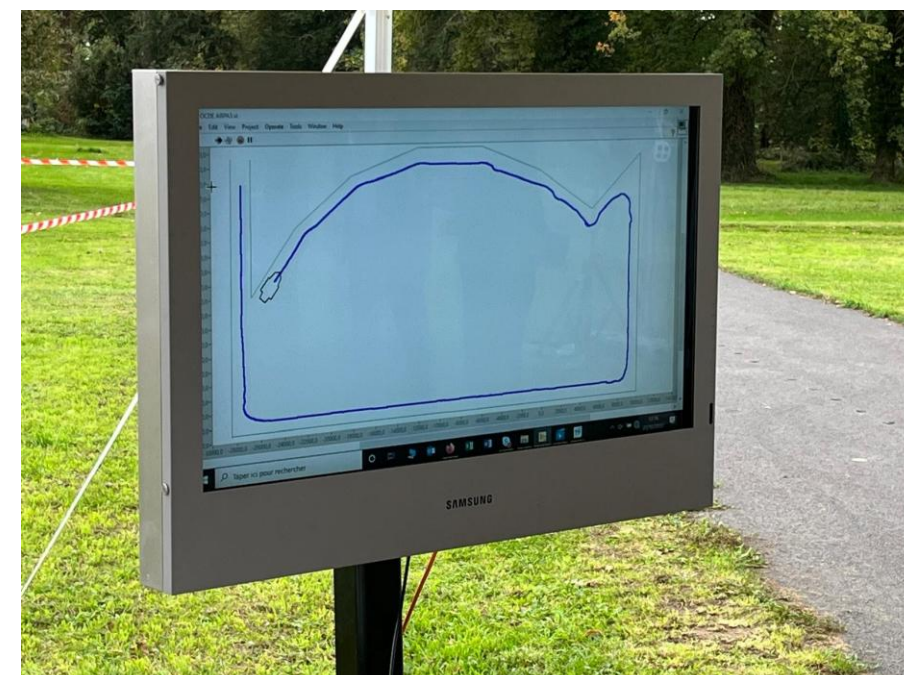
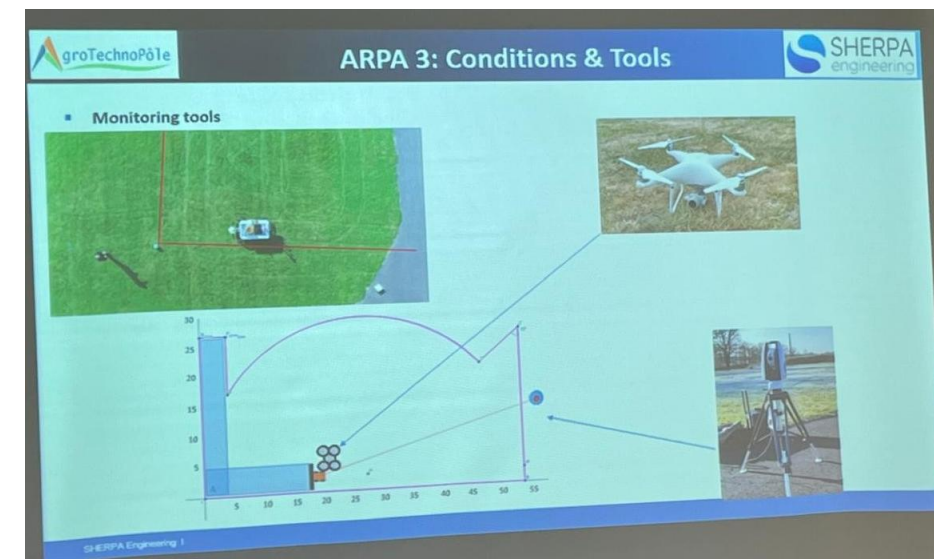
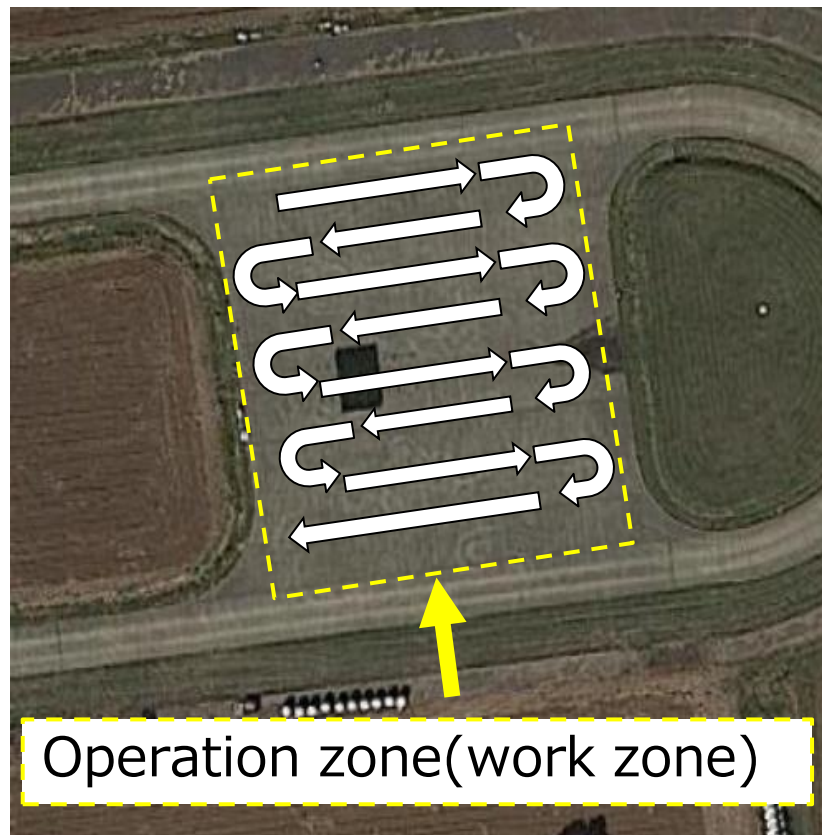
OECD Standard Codes for the Official Testing of Agriculture and Forestry Tractors

Draft Test Method for Autonomous Tractors

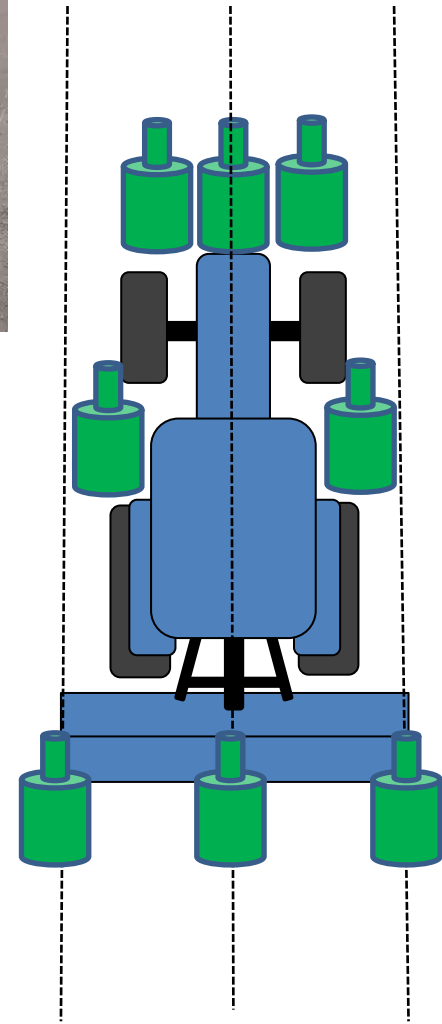
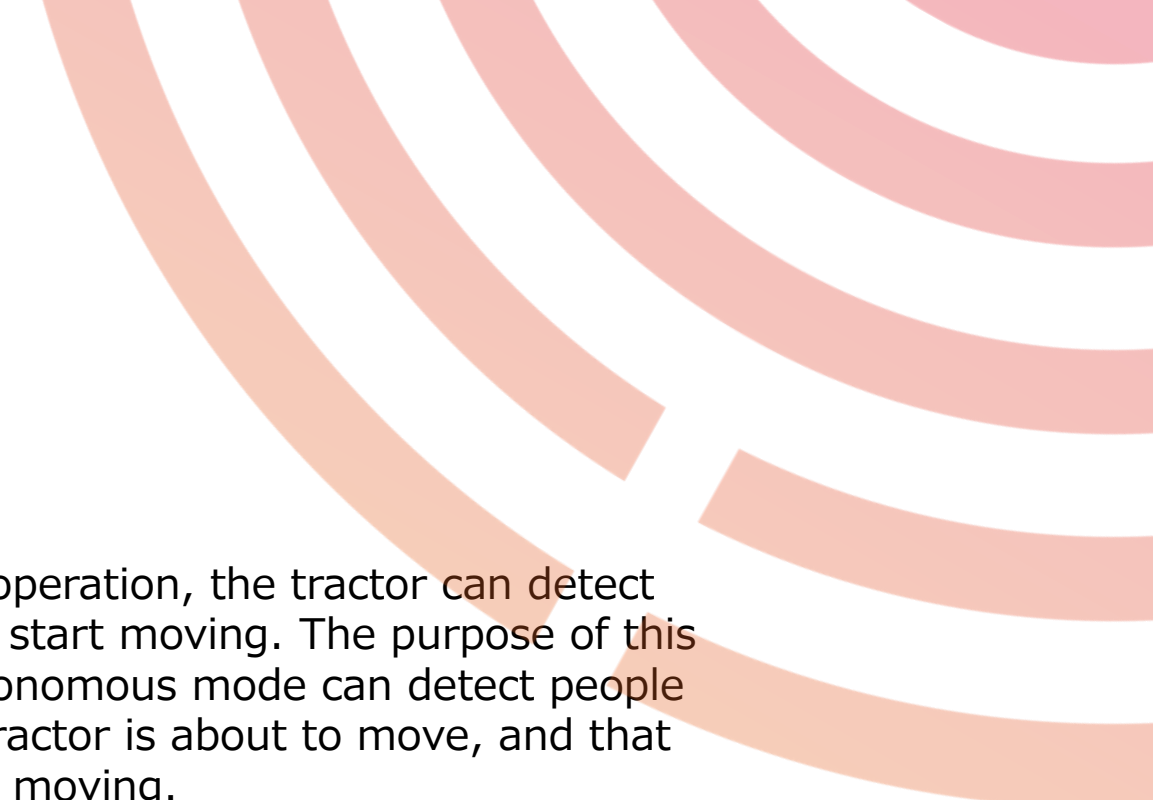
Geofencing test

(Test conditions

- The test shall be conducted in a open field large enough for the tractor and implement to turn 10 times or more.
- The test shall be performed on the tractor in autonomous mode, moving at the machine's permissible maximum speed.
- The applicant shall select an implement that can be mounted to the tractor and mount it to the testing tractor.



Person/obstacle detection function test



This test checks on starting autonomous operation, the tractor can detect person/obstacles without contact and not start moving. The purpose of this test is to check that the tractor in the autonomous mode can detect people and obstacles without contact when the tractor is about to move, and that the tractor has a function to prevent from moving.

The test obstacles shall be placed in the hazard zone of the tractor in the autonomous operation enabled state in a halt.



< Example of placement of test obstacle on starting >



Thank you

x

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