

# AGROINTELLI

AGROINTELLI was founded in 2015 as an innovation house for new technologies within agriculture. Initially, working closely together with universities and research institutions, AGROINTELLI introduced various new technologies for which the company has received many innovation awards. However, given the business opportunity reflected in current challenges within modern farming it's our mission to offer a generic fully automated farming system for arable farming on the global market. Thus, fulfilling our vision to make global food production more reliable, sustainable and profitable.

ROBOTTI, our field robot, has research roots going back to early 2000. Since then different versions have been tested and valuable lessons have been learned. Based on nearly 20 years of research and development, an advanced version of the robot was introduced to the market in November 2018.

Our organisation currently consists of 40 employees; of which 7 person works with sales and marketing; 3 in production planning and purchase along with 6 production workers; 12 in development and our CFO and CEO.

Manufacturing and distribution of ROBOTTI on a large scale is now the sole strategic focus of AGROINTELLI, motivated by current trends and challenges within the modern food production industry and the arable farming sector.





## A More Sustainable Choice

Ambitious farmers are seeking autonomous precision solutions for field work that is robust, powerful and obtain a fairly high working capacity. Therefore, AGROINTELLI has developed and are manufacturing ROBOTTI 150D. A powerful ag-robot with 150hp generated from a traditional diesel-hydraulic setup which have the capability of operating hour after hour – also during night. ROBOTTI represents a more sustainable solution, because it consumes significantly less fuel than a traditional alternative – only between 3-6 liters pr. Hour depending on the soil and operation. Furthermore, ROBOTTI weights much less than a traditional alternatives. Only around 3.000 kg. This minimises the risk of soil compaction. Finally, ROBOTTI operates and navigates from advanced software which calculates an optimized route in the field, which allows the robot to finish quicker. On that basis AGROINTELLI and ROBOTTI has received the honourable “Solar Impulse Label”, which awards efficient, clean and profitable solutions with a positive impact on environment and quality of life.

# ROBOTTI

ROBOTTI is a 100 % autonomous agricultural robot, which is able to operate in different crops with different standard implements. ROBOTTI assists and relieves the farmer from several tasks in the field throughout the growth season. From seedbed cultivation, seeding and mechanical weeding.

ROBOTTI is still diesel-hydraulic mechanical setup but operates without a human driver. Furthermore, ROBOTTI has a standard three-point hitch. Therefore, ROBOTTI is robust, reliable and is able to carry standard implements already available on the market today.

The robot consist of two modules, which are connected with a centre-boom. In the middle of the centre-boom, a standard 3-point lift is installed. This allows the robot to operate the field with many different implements throughout the season. The working width between the modules are usually 3 meters but can be customized towards the farmer's needs.

Having the lift located in the centre-weight of the robot gives a perfect and equal weight distribution on to the 4 wheels. This design prevents the implement from swinging and allows the robot to operate extremely precise and accurate. Furthermore, this design makes the robot relatively light weighted. Typically, less than half the weight of a similar advanced tractor. Lower weights minimise risk of soil compaction, which maximise crop yields.





# Mechanics & Navigation

ROBOTTI follows a “traditional” diesel-hydraulic setup with standard components. This mechanical setup makes it easy to service for any trained mechanics, and spare parts are always nearby. Finally, this setup allows the robot to operate 24/7 – it only requires re-fuelling once in a while. ROBOTTI has 2 x 110 liter diesel tanks and consumes between 3-6 liters pr. Hour depending on the task and soil conditions.

ROBOTTI is produced in two versions, which on the outside are identical, but differs on the inside. ROBOTTI 75S is produced with one single 75hp Kubota diesel engine – only for propulsion. Whereas ROBOTTI 150D has two 75hp Kubota diesel engines – one engine for propulsion, and another engine for running the PTO and external hydraulics.

Robot benefits from precise RTK GPS technology for navigation. RTK in general has an accuracy of plus minus 2 cm. However, our experience is that the design of the robot allows for more precise navigation than this



## Create a Plan

Select a field and upload field boundaries (SHAPE file for example). Specify the implement you want to use and the task you want to solve.

Define how you want to work the headlands.

Define how you want to approach the crops rows.

Once the plan is generated it is automatically uploaded to the cloud. Now ROBOTTI can access this plan and operate it. Furthermore, this plan can be used year after year.



## "Start"

The plan is stored on AGROINTELLI server, and the robot is now ready to be taken to the field. You unload the robot on the field, select the plan on the screen of the robot and press “Start”.

ROBOTTI now begins to operate according to the plan. Meanwhile, you are free to do other things.



## End of task

ROBOTTI estimates how long it takes to complete the job. Furthermore, it is equipped with live-surveillance cameras, which you can access and monitor if everything is running according to the plan. Should it begin to rain or should the implement have picked up a stone – then you can stop the robot online

When ROBOTTI is finished it forwards you a text message saying it is ready for pick up and the next task.



## Safety

Robotti is safe and legal to operate – also during the night. It complies to all standards and demands according to the EU Machinery Directive. Robotti is CE marked, and the safety system of Robotti has been designed in a redundant way. This means that different safety technologies steps in place in case of the unexpected. Therefore, the robot is equipped with several emergency stops, LIDAR-Scanner, pressure safety bumper and the field it is operating has been “Geo-fenced”. ROBOTTI cannot drive off the field.

## General

The robot is produced in Denmark, and it's on the market for sale. We have established partnerships in Scandinavia, United Kingdom, Czech Republic, Slovakia, The Netherlands and Switzerland.

*Contact our Sales Manager, Frederik Rom  
for more information*

**Mail: [Frr@agrointelli.com](mailto:Frr@agrointelli.com)**

**Phone: +45 9189 1181**

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