HEXAGON

Brochure

Hexagon is the ideal partner in your Digital Transformation journey

Learn more about our solutions for manufacturers of machines, tractors and agricultural implements.

Reasons to choose Hexagon as your partner in your Digital Transformation:

Global Presence

We are an established leader in information technology solutions.

We are a “one-stop shop”

The synergy between our divisions allows us to offer unique and complete solutions.

We are consolidated

A dependable option for an organisation seeking safe and long term partnership.

Expertise

We prepare your technical team through continuous training programs and advanced assistance centres so that you can provide excellent support to your customers.

Innovation

High and continuous investment in Research & Development, guaranteeing products with the latest technology and in line with the latest market demands.

Flexible Solutions

We offer customised products that allow integration with existing technologies and components. Our displays are fully compatible with several ECUs and displays from other brands can be integrated with our ECUs, according to the needs of each partner.

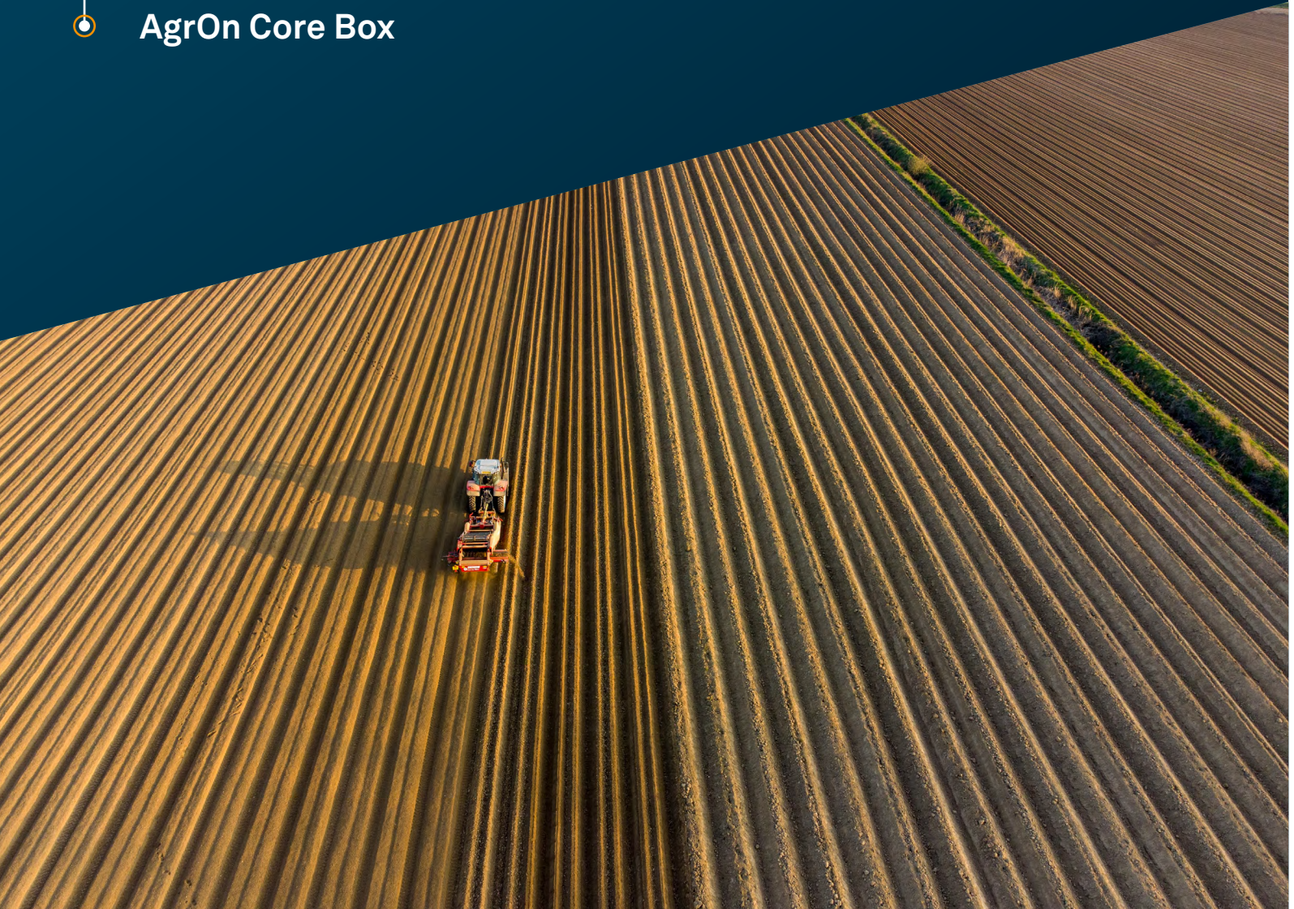
“More than the autonomy of vehicles, we have the vision and work to develop the autonomy of processes. We believe that we are on the right path and that this future will arrive faster than one imagines. Step by step, gradually, following the example of the evolution of the technologies mentioned here, we will continue in the successful mission of making agricultural production increasingly efficient through the autonomy of machines and processes.”

Bernardo de Castro,
President of Hexagon’s Agriculture division

Discover our Embedded Electronics solutions

- AgrOn Track Controller
- Ti5, Ti7 and Ti10 Displays
- AgrOn ECU
- AgrOn ECU ISOBUS
- AgrOn Core Box

Read the QR Code and access our available digital flyers.



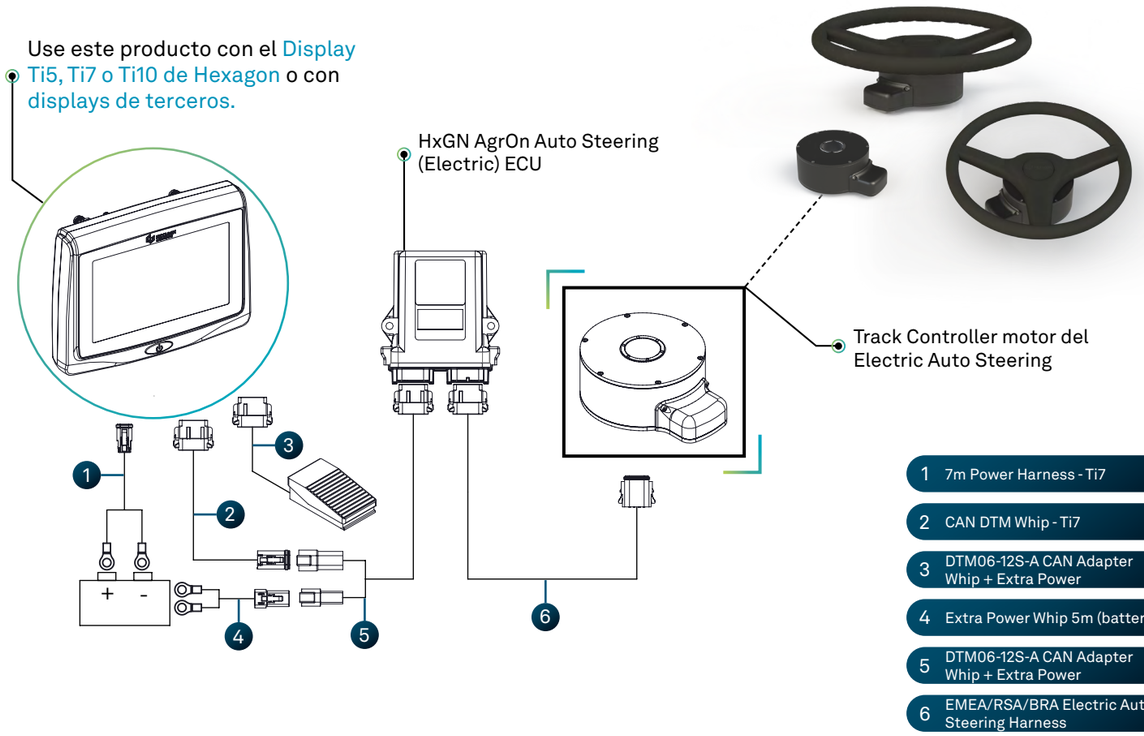
HxGN AgrOn Track Controller

Electromechanical steering system (AgrOn Auto Steering electric) that **provides a retrofit solution for most models of tractors, sprayers and harvesters available on the market**. With its ergonomic design, it allows a quick installation and easy transfer between several vehicles, as well as switching on and off in a simple and fast way, allowing the transfer between several brands and types of vehicles.

- **Easy installation**
- **High speed response**
- **No hydraulic installation required**
- **Possibility to operate together with ECU**

Technical Specifications:

- Brushless DC motor
- Adapter specifically designed for steering column
- Handheld sensor on the steering wheel, when integrated into the ECU
- Remote hitch switch
- Integrated power switch
- Power: 12V - 10A max peak
- Maximum speed: 200 RPM
- Torque rated at 160 RPM: 4,01 Nm
- Maximum Torque (stall): 5,65 Nm
- Weight: 2.65Kg
- Operating temperature: from -40°C to 85°C



1. 7m Power Harness - Ti7
2. CAN DTM Whip - Ti7
3. DTM06-12S-A CAN Adapter Whip + Extra Power
4. Extra Power Whip 5m (battery)
5. DTM06-12S-A CAN Adapter Whip + Extra Power
6. EMEA/RSA/BRA Electric Auto Steering Harness

Ti5, Ti7 and Ti10 Displays

Unit of software, sensors and actuators used to monitor and automate agricultural operations.

Understand the differences between our displays below, and discover the best option for your operation:

Ti5 Display

This model is available in a 5” screen with IP65 and is indicated for operations that can be carried out with low precision, such as spreading limestone in a distributor. In Ti5 Display it is possible to include AgrOn Electric Auto Steering, AgrOn Guidance and just another product to choose from.

Ti7 Display

This model is available in a 7” screen with IP64 and optional mobile communication items such as Wi-Fi and/or 4G. The Ti7 Display is ideal for operations that require high precision in the execution or when you want to have the combination of two or more activities at the same time since it is possible to include all the precision agriculture resources in a single equipment.

Scan the QR Code and watch the Ti10 Display video.

Ti10 Display

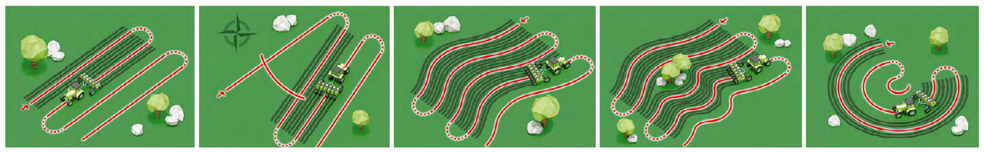
Developed with disruptive technologies and high processing capacity, Ti10 enables greater connectivity between field operations. With a friendly and easy to use interface, it is ideal for any type of operation and conditions of use. Ti10 has a 10” screen and accepts all the features of precision agriculture in a single device.

Farming Accuracy

- GNSS L1 GPS/Glonass Autônomo: 15 cm (pass to pass, 15min)
- GNSS L1 GPS/Glonass EGNOS*/WAAS**: 50 cm (with repeatability)
- GNSS L1/L2 GPS/Glonass: 10cm (pass to pass, 15min)
- GNSS L1/L2/Lband GPS/Glonass TerraStar: 3 cm (with repeatability)
- GNSS L1/L2 GPS/Glonass RTK: 2 cm (with repeatability)

* available only in Europe
** available only in the United States.

Operation Mode



Learn more about each of the available display models:

Characteristics	Ti5	Ti7	Ti10
Screen size	5" LCD	7" LCD	10.1" LCD
Processor	Single core 800 MHz 1x ARM Cortex-A9	Single core 800 MHz 1x ARM Cortex-A9	Quad Core 1.2 GHz 4x ARM Cortex-A35
Storage capacity	RAM: 1 GB DDR3 FLASH: 4 GB eMMC	RAM: 1 GB DDR3 FLASH: 4 GB eMMC	RAM: 2 GB DDR3 FLASH: 32 GB eMMC
Screen configuration	16M colours, 600 cd/m2 brightness and 600:1 contrast	265K colours, 1000 cd/m2 brightness and 400:1 contrast	16Mcolors, 1000 cd/m2 brightness, 800:1 contrast
Resolution	800×480	800×480	1280x800 (HD)
Display size	162 mm (W) × 125 mm (H) × 45 mm (L)	208 mm (W) × 159 mm (H) × 57 mm (L)	177 mm (W) x 250 mm (H) x 47 mm (L)
Sturdy aluminium case	Yes	Yes	Yes
High contrast and configurable lighting for different visibility conditions	Yes	Yes	Yes
Adjustment of screen brightness	Manual	Manual	Automatic
Camera	No	No	5MP Front Camera*
Audio system with built-in speaker and microphone	No	No	2W speaker Front microphone for audible alerts
Multi-language support	Yes	Yes	Yes
Wi-Fi 2.4GHz*	No	Optional	Yes
Record of detailed information of operations and export/transmission of files	Yes	Yes	Yes
Digital Radio 900MHz or 433Mhz*	No	Optional	Optional
4G+ cell phone with 28 band support (700MHz)*	No	Optional	Optional
Bluetooth	No	Optional	Bluetooth 5.0
User Entry	Touch screen and Power button	Touch screen and Power button	Touch screen and Power button
Battery	-	-	Li-Ion 4.900 mAh*
ISOBUS	No	Yes	Yes
Quantity of products per equipment**	Up to 3	No limit	No limit
External map reading in shape (.shp) format, prepared in the office	Yes	Yes	Yes
Protection Index	IP65	IP64	IP66, IP67

Characteristics	Ti5	Ti7	Ti10
Power supply	12Vdc	12Vdc	12Vdc
Operating temperature	-20°C to 60°C	-20°C to 60°C	-20°C to 70°C
Storage temperature	-30°C to 80°C	-30°C to 80°C	-30°C to 80°C
Interfaces	USB (x1), CAN (x1) and RS-232 (x1)	USB (x1), CAN (x2) and RS-232 (x2)	USB (x2), CAN (x3) and RS-232 (x2)
Certifications	CE, RCM, RoHS, WEEE	ANATEL, CE, RED, RCM, RoHS, WEEE	ANATEL, CE, RED, RCM, RoHS, WEEE

HxGN AgrOn ECU

Electronic unit for controlling engines, cylinders and valves, which interfaces with sensors and actuators in agricultural and forestry implements. Each application may require different ECU models and, eventually, the combination of more than one.

Technical specifications of each model:

Fertilisation, planting and auto steering:

- Position and speed control of a 14A three-phase brushless motor
- Brush position and motor speed control
- Control of up to 3 proportional valves per solenoid
- Integrated 6-axis Inertial Measurement Unit (IMU)
- Used in AgrOn Fertilisation Control, AgrOn Planting Control and AgrOn Auto Steering (Electric and Hydraulic) products
- CAN Bus Communication

Spraying:

- Control of a solenoid valve
- Control of up to 16 electric valves (on/off)
- Used in the AgrOn Spray Control product
- CAN Bus Communication

Planting and machine monitoring:

- 18 Digital Inputs
- Brush position and motor speed control
- Control of up to 3 proportional valves per solenoid
- Integrated 6-axis Inertial Measurement Unit (IMU)
- Used in AgrOn Planting Monitor and AgrOn Machine Monitoring products
- CAN Bus Communication

HxGN AgrOn ECU ISOBUS

Electronic unit for controlling engines, cylinders and valves, which interfaces with sensors and actuators in agricultural and forestry implements with ISOBUS communication.

Product Features:

- Ideal for controlling and monitoring fertilisation activities
- Compatible with displays from other manufacturers via ISOBUS Virtual Terminal and Task Controller
- Modular software architecture, allowing for custom operating rules and dynamic settings
- It has easy and quick calibration
- Operation screen with great usability
- Hardware and software support different types of field conditions
- Software identified
- Robust hardware

Characteristics	ECU ISOBUS
Performance	RM Cortex-M7 400 MHz, Flash memory 16 MB, RAM memory 256 kB and Non-volatile memory 128 KB
Communications	2x CAN bus
Outputs (PWM)	3x half bridge up to 10A per channel* 4x half bridge up to 2A per channel*
Inputs	4x digital inputs 2x analog input
Inertial Measurement Unit	6 axis inertial sensor
Power supply	12 VDC or 24 VDC nominal voltage. Operating Range: 7-36 VDC
Protection Index	IP67
Operating Temperature	-40 to +105 ºC
Approvals	CE and RMC, Vibration and Shock, WEEE and RoHS

*total output current: 14A
** 2 inputs shared with outputs

HxGN AgrOn Core Box

Hexagon's response to a fragmented industrial technology scenario that is rampant and has compatibility problems. AgrOn Core Box integrates tractors, implements and agricultural and forestry machines in a single user interface.

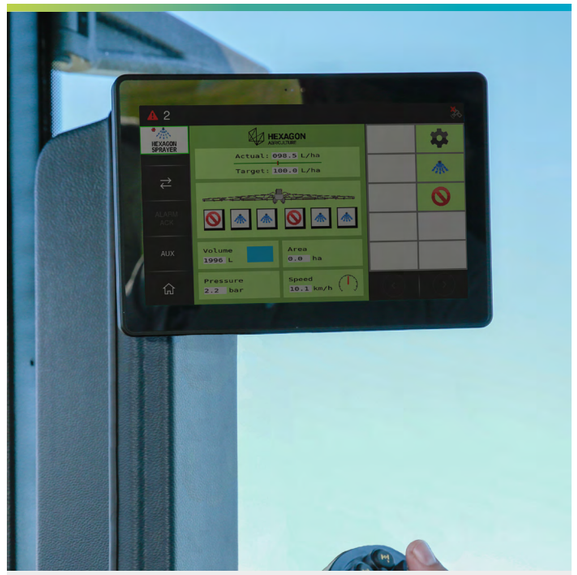
- Connectivity via Wi-Fi, mobile data and/or long-range radio
- High processing capacity with implementation of own APIs and complex algorithms such as driving
- Future routes that include integration through standard protocols such as ISOBUS
- Sensors that include positioning technologies, with integrated GNSS, IMU and several inputs to manage the main functions (control of valves, engines, etc.)
- An agnostic display design that works perfectly with third-party displays and monitors
- Ability for tractor manufacturers to increase demand for automated drive delivery in factory equipped units

Discover our Machine Control and Precision Agriculture solutions

Our products allow users to use all solutions and a single display, without the need for hardware duplication.

Scan the QR Code and access our available digital flyers for the solution.

Machine Control



AgrOn ISOBUS Display

Promotes a standard communication between embedded electronic systems through a digital bus, allowing data communication between sensors, actuators, and controllers.

- Includes the Universal Terminal (UT) and the Task Controller (TC)
- Has TC-BAS, TC-SC and TC-GEO capabilities
- Plug-and-play installation on steer ready machines
- Possibility of section shutdown and control at fixed and variable rate
- Activity logging and telemetry
- Works on agricultural and forestry machinery
- Integrated with Ti7 or Ti10 display

Scan the QR Code and watch the video.

AgrOn Guidance

Helps machine orientation through arrows and virtual direction lines for the operator to reference – aiming to maintain planned alignment and obtain greater speed, practicality and quality.

- Accuracy in all operating modes - straight, curved and pivot
- Multiple guidance options
- Enables control of the applied area by loading maps into the system
- Allows marking objects on the map for better orientation when visibility is impaired
- Can be integrated with the Ti5, Ti7 or Ti10 display

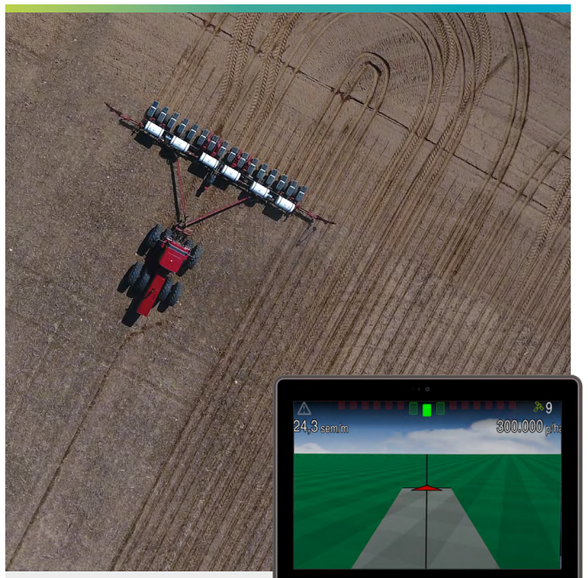
AgrOn Auto Steering

Support system for tractor, machinery and agricultural equipment with automated navigation.

- Support system for tractor, machinery and agricultural equipment with automated navigation.
- Electric or hydraulic drive, also compatible with predisposed machines *
- Tilt correction system and sudden manoeuvres
- Possibility of working on straight lines, curves and pivots
- Adaptability to most tractors on the market
- It delivers high performance guaranteeing better adjustment time to the route
- Possibility of loading maps with lines designed in the office
- Can be integrated with the Ti5, Ti7 or Ti10 display

Scan the QR Code and watch the video.

* Check working accuracy available for each model.

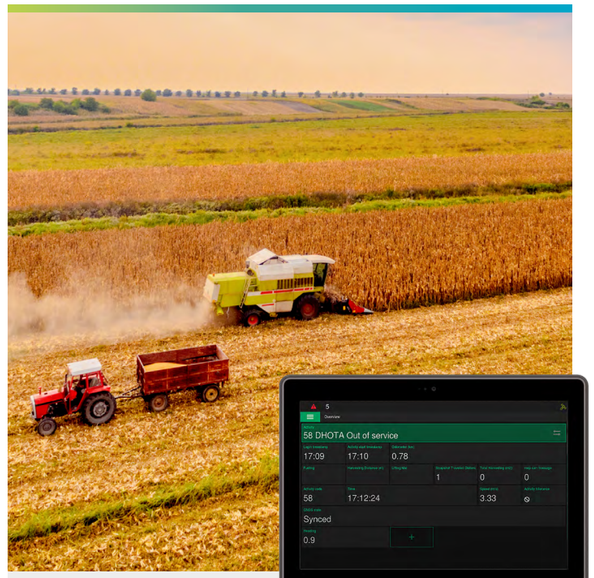


AgrOn Planting Control

It makes it possible to open and close the planter clutches automatically, or to turn off hydraulic motors that drive the lines, without the need for mechanical stops or adaptations on the machine.

- High precision controller
- Controls up to 5 simultaneous inputs, 1 of which is seed or tarpaulin, 3 of fertiliser and 1 liquid
- It has simple calibration and operation
- Planting at fixed and variable seed rate
- Monitors and controls each section of seed or fertilizer
- Can be integrated with the Ti5, Ti7 or Ti10 display

Scan the QR Code and watch the video.



AgrOn Machine Monitoring

Information management of machines and fleets that are in the field.

- Reading the RPM and/or similar machine parameters
- Monitoring of production times, automatic classification through rules associated with positioning, sensors and tolerance time
- Monitoring unproductive times, with simple and flexible interface for pointing out reasons for suspended operation
- Displays the operating speed information on the onboard controller
- Integration with pre-existing machine sensors or installation of own sensors
- Allows configuring alarms, such as sensor measurements, inconsistent operator appointment with combination of sensor states, reason for not appointed time
- Possibility to work together with AgrOn Control Room
- Can be integrated with the Ti5, Ti7 or Ti10 display

Scan the QR Code and watch the video.

AgrOn Sprayer Control

It performs the automatic control of the spraying sections, minimising overlap in the application of inputs and avoiding excess and failures in the application of the areas.

- Enables manual and automatic control of sections, minimising overlap in the application of input
- Enables manual control of sections
- It allows installation with several valve assemblies in different types of sprayers
- Monitors and controls the application of up to 2 liquid inputs in up to 16 sections
- Can be integrated with the Ti5, Ti7 or Ti10 display

Scan the QR Code and watch the video.

AgrOn Fertilisation Control

Intelligently regulates and automates the application of limestone and fertilisers, avoiding waste and failure. In addition to showing coverage of the application area in real time, during operation.

- Possibility of installation on tracked implements and with linear actuator
- It has simple calibration and operation
- High precision controller
- Display of application tracks during operation
- Detailed operation information records
- Monitors and controls the application of up to 3 solid inputs
- Imports maps defined in the office
- Control of the rotation of the plates (discs) of fertilizers that apply the product to haul
- Section shutdown on hydraulic motors
- Can be integrated with the Ti5, Ti7 or Ti10 display

Scan the QR Code and watch the video.

Read the QR Code and watch the video about our solutions for agricultural and forestry machinery manufacturers.

Discover our Monitoring solutions

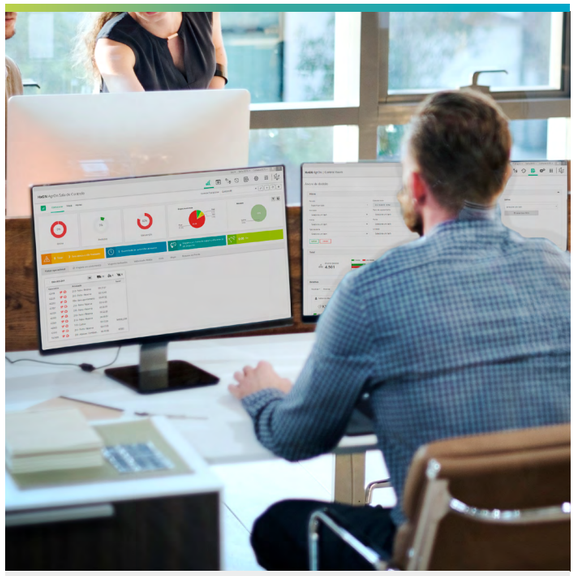
- AgrOn Remote Access
- AgrOn Control Room

Monitoring

AgrOn Remote Access

System for exclusive remote technical assistance service for displays and onboard controller. A customisable solution with the partner's brand, ideal for having a direct relationship with the customer.

- Allows you to remotely monitor the machine
- Ensures a real-time service, effectively and with lower costs
- Grants control of the display for quick technical assistance
- Accepts different Internet connections: cable, Wi-Fi, 4G, 3G and also, 2G



AgrOn Control Room

Summarises real-time fleet & operations data, helps with decision making and sends commands.

- Viewing maps and reports on georeferenced maps
- Configuration of alerts of irregularities and divergences
- Integration with existing and third-party hardware and software
- Traceability of hours worked, productive times
- Can be integrated with the Ti5, Ti7 or Ti10 display

HEXAGON

Hexagon is a global leader in digital reality solutions, combining sensor, software and autonomous technologies. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and Mobility applications.

Hexagon's Agriculture division provides technologies that convert data into intelligent information that enables smart planning, efficient execution, precise machine controls and automated workflows that optimise operations and increase profits.

Our technologies are shaping production and people-related ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 24,000 employees in 50 countries and net sales of approximately 5.2 bi EUR.

Learn more at hexagon.com and follow us @HexagonAB.

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