

# Agriculture Perception

A complete solution for vision-based autonomy powered by Hexagon's Autonomy & Positioning perception stack



Enable automation and ADAS in agricultural applications with Hexagon Autonomy and Positioning Perception solution. The kit contains ECU, four surround-view mono cameras, stereo camera with cables and brackets to get you started. Together they provide an accurate and robust solution for positioning objects and obstacles around the vehicle with Hexagon's robust agriculture specific algorithms.

## Intelligent Perception

Using intelligent perception, Hexagons solutions reduce false-positive detections and creates a larger safety zone allowing for faster and wider implements, enabling better returns for autonomy customers. When used in ADAS solutions, Hexagons perception solutions will allow operators to focus on agronomic tasks leaving the vehicle operational.

## Object Recognition

Specific objects may require specific actions. Hexagon's perception solutions can identify objects commonly found in agricultural scenarios including vehicles and pedestrians, allowing for expanded autonomous programming. Along with the ability to detect unknown objects in the forward zone, Hexagon's perception solutions can ensure maximum uptime for the operation.

## Unknown Objects

Hexagon perception solutions are designed for agriculture environments, which are notoriously unpredictable. Unknown Object Detection offers more extensive spatial intelligence, allowing developments to move around obstacles into unoccupied spaces. Leveraging our unique algorithms your machine will benefit from fewer false positives resulting in greater uptime.

## Surround View

Featuring four, robust, agriculture ready surround View 171° cameras with

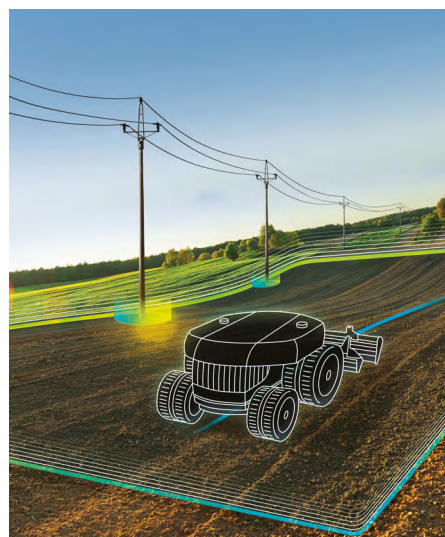
factory calibrated lenses with a built-in IMU, paired with forward facing stereo camera, Hexagons perception solutions can capture the required field of view needed for robust operation.

## Field Ready

The rugged Hexagon perception solution enclosure and cameras are designed to withstand harsh agriculture environments for longevity in the field.

## Integration Ready

The solution contains Cameras, Computer, Cabling and Software to get your product to market quicker. API documentation and Integration of existing NovAtel tools as well as Industry standards such as ROS2™ means your time to market and perception challenges are reduced.



## Benefits

- Explicitly designed for agriculture
- 360° intelligent perception and positioning of objects around the vehicle, front, rear and sides
- High speeds and operational widths
- Utilizing Hexagon's proprietary AI object recognition, trained specifically for agriculture.
- Robust enclosures for agriculture
- Web interface for easy viewing of perception data
- Powerful desktop application (Novatel Application Suite + Perception) for in depth configuration and system diagnostics
- Shared access to visual data for multiple applications
- Classification for key objects
- Factory calibrated lenses
- Tag and report anomalies

## Features

- Known Object detection for high value targets
- Unknown Object detection
- Scene and noise filters for Agriculture
- 1- ECU with Nvidia AGX Orin
- 4- GMSL mono cameras with integrated IMUs
- 1- Wide baseline Stereo Camera
- Industry-standard interfaces through ROS™ 2 and proprietary messages
- Over-the-Air updates and diagnostics
- Integration with NovAtel Industry leading positioning