Advanced Sensing for Efficient Autonomous Harvesting

The Challenge

Our customer in this instance was a manufacturer of autonomous and semi-autonomous farming systems. The company wanted to integrate advanced optics in their machinery in order to better detect the edge of crops, speeding up harvesting and minimizing any product loss. Specifically, their aim was to enable their harvesting vehicles to "sweep" the fields more precisely and avoid missing any sections and ultimately help farmers increase productivity.

LeddarTech's Solution: Leddar™ M16 Multi-Element Sensing Module

In this case, we recommended our 16-element sensing module, as its accurate and robust ranging capabilities allow for easy differentiation between the heights of the harvested vs. non-harvested crops. Moreover, the dust created by this task does not have a significant impact on the performance of this sensor, so the detection and ranging capabilities remain accurate in such an environment.

Product features:
- Large detection area with immunity to ambient light and dust
- Ease of integration and ruggedness
- Best cost/performance ratio as compared with competing detection technologies.

The Outcome

The Leddar™M16 was an excellent solution for this particular application, as it was easily integrated into the controller of the autonomous vehicle's on-board navigation computer. The customer was therefore able to include value-added ranging features in their new, high-performance autonomous farming systems, allowing vehicles to follow crops more precisely and ultimately increasing overall harvesting efficiency.
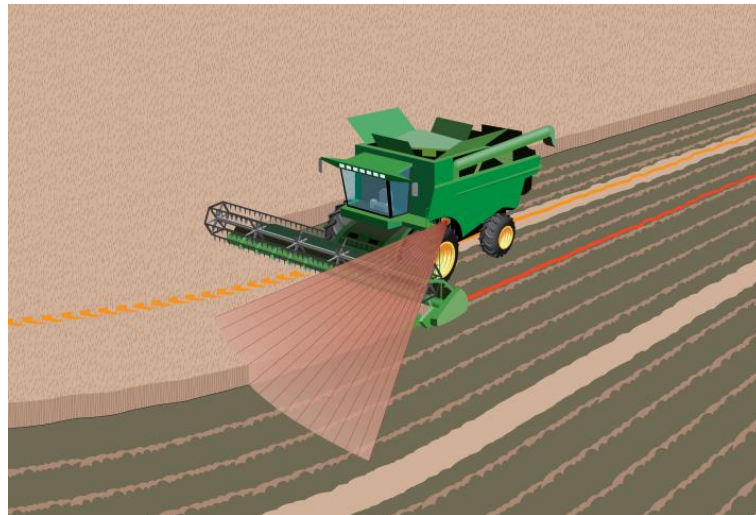

Fig. 1   Leddar™ sensor physically installed on the harvesting section of the vehicle

Product References
- Leddar™M16 Multi-Element Sensing Module