

Precision farming & agri-tech

- Accelerated crop development processes
- Farm robotics, automation & intelligence
- Chemical formulation & delivery



Innovation for farmers & agronomists

Sensors, robotic guidance systems, crop sorting, yield measurement

Chemical formulation, dosing, mixing, handling and application, smart irrigation

Seed breeding tools, gene editing automation & process flow analysis



Next-generation agriculture →

We work with agricultural machinery manufacturers on new ways to automate and add intelligence. We construct in-field data gathering devices and cloud platforms to deliver insight for farmers and agronomists.

We help seed breeders accelerate their development processes and scale their operations to meet rising demand.

Downstream, we work with food processing companies on producing high-quality raw materials; handling processes and end-products

Sagentia in agri-tech →

Feeding 9bn people by 2050 amidst climate change and environmental concerns bolsters the need for new efficiencies, improved yields and smarter agricultural practices.

Working across the entire agricultural supply chain, our projects cover robotics, smart sensors, haptics, metering, fluidics, software, artificial intelligence and connectivity. Combined with our teams of highly qualified and experienced chemists, physicists and engineers, makes us the perfect partner for agri-tech innovation.

At Sagentia, we work across the development lifecycle:-



initial need and market analysis



concept generation



technology and product development



transfer to manufacture

Leading farm equipment manufacturer

Grain metering device for combine harvester



Full case study overleaf →

Intelligent crop sorting machinery

Vision-based rice sorter



Full case study overleaf →

Grain metering device for combine harvester

Challenge ↪

Our client approached us for a device which could be added to their combine harvester range to work out the relative yields of different parts of a field in real-time during harvest



Approach ↪

- Grain is difficult to measure in real-time due to the non-uniform density of solids
- We assessed different methods of measuring mass flow rate taking into account the dusty and unpredictable, mobile, environment
- Mathematical and analytical modeling validated the concept
- We developed a vibrating plate system capable of delivering the force required at a flow rate of one kilo per second
- Integration and compatibility with the wider connectivity platform



Benefit ↪

- The client is now able to provide their customers with yield data in real-time during harvest
- Customers will be able to benefit from tailored chemical and crop care programmes on an area by area basis
- Customers receive a geo display of yield for precision dosing and irrigation

High-speed crop sorter and grader

Our client wanted to improve the performance of its optical food inspection equipment

Challenge ↪

The client wanted to be able to sort and grade rice, beans and seeds at speed, remove foreign bodies and partition into colours. They needed a high throughput system



Approach ↪

- We employed the qualities of hyper-spectral imaging to highlight varying degrees of light luminescence, absorption and transmission
- We made a light, robust, low power device which could be integrated into farm machinery
- Sagentia designed the optical system, characterising the imaging optics for resolution and distortion at two wavelengths
- Using algorithms we extracted the complexity from the results to create a user friendly set of data



The machine is in full production and has been highly successful

Benefit ↪

High-speed, accurate sorting of a range of food products including rice, beans, seeds, nuts and vegetables

Contact us

The above are just two examples of our work in Agri-tech. For more information, please email us at info@sagentia.com or visit us at www.sagentia/agri-tech