



AGILEHAND

SMART SENSING PACKAGE

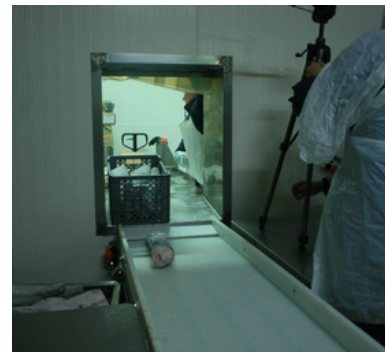
AUTOMATIC SMART GRADING SYSTEM FOR THE FOOD INDUSTRY

SUITE DESCRIPTION

Revolutionize food processing with the fully automatic Smart Sensing Suite for superior quality and efficiency

The AgileHand Smart Sensing Suite is a **fully automatic smart grading system designed specifically for the food processing industry**. This innovative solution leverages advanced technology to objectively classify food products, ensuring outstanding quality and increased throughput compared to traditional human-centered methods.

The Smart Sensing Suite improves food processing by **automating the grading process**, significantly reducing human error, and ensuring consistent, high-quality output. The system's objective classification capabilities lead to more precise and reliable grading, helping companies meet stringent quality standards and enhance their overall productivity.



EXPECTED IMPROVEMENTS

+25%

Increase the pace of the product scanning system

-20%

Reduce the number of delicate products damaged during handling, sorting and packaging

+30%

Increase the degree of product traceability in a processing line

-20%

Reduced time to add new products to a processing line

-20%

Reduction of waiting times in production queues

-15%

Reduction of energy consumption



MAIN BENEFITS

With the Smart Sensing Suite, it's now possible to:

- **Reduce Human Error:** Minimizes inconsistencies and errors associated with manual grading.
- **Enhanced Compliance:** Meet stringent industry standards and regulatory requirements with ease.
- **Increased Throughput:** Automated processes significantly boost productivity and operational efficiency.
- **Higher Quality Assurance:** Objective classification ensures consistent and superior product quality.
- **Cost efficiency:** Reduces labor costs and improves overall operational cost-effectiveness.

SOLUTIONS INCLUDED

- **AgileHand Grade the Quality:** A cost-effective, accurate, and fast solution to grade the quality (both interior and exterior) of delicate objects.
- **AgileHand Self-Calibrating:** A self-calibrating solution for producing networks of sensors to improve production-line traceability.
- **AgileHand Data-Sets:** Data-sets containing scans of delicate objects in a real environment with ground-truth data.

USE CASES

FROZEN FISH

The Smart Sensing Suite is being tested at PRODUMAR, a frozen fish company in Porto, Portugal. This initiative aims to assist operators in classifying fish steaks by **collecting annotated samples to train an algorithm**, developed in collaboration with technology providers UNINOVA and FBK.

The team has verified classification requirements, tested a depth camera on the production line, and gathered datasets, key steps in **developing self-calibrating sensing solutions to improve traceability and efficiency across the production line.**



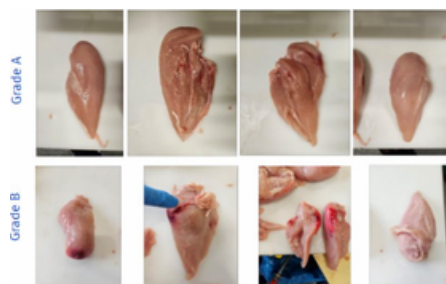
PRODUMAR specializes in trading and processing of frozen and deep-frozen fish.



CHICKEN FILLETS

The Smart Sensing Suite is being tested and implemented at MARELEC, a high-tech manufacturing company in Nieuwpoort, Belgium. **The goal is to grade chicken fillets into two categories based on criteria such as the presence of blood clots, rips, or other defects.** The plan involves acquiring a dataset to train a deep learning model that will facilitate this grading process.

The expected outcomes include **reducing product grading time by up to 30%, enhancing grading accuracy, and decreasing waste by up to 20%.**



MARELEC designs high-tech portioning, weighing, grading and control systems for the fishing and food industry.



FRUIT

The Smart Sensing Suite is being tested and implemented at Sant'Orsola, a small fruit producer in Italy, to address **the challenge of grading raspberries at the individual fruit level.**

Using the suite's technologies, **they are conducting a feasibility analysis and anticipate achieving up to a 15% improvement in grading accuracy,** which could lead to a **reduction in waste by up to 10%.**



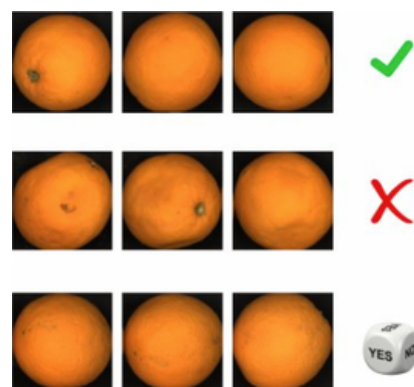
SANT'ORSOLA is a producer of small fruits, strawberries and cherries.



VEGETABLES

Multiscan currently specializes in item-level grading of fruits and vegetables. The objective within the AgileHand project, using the Smart Sensing Suite, is to **pregrade a crate of fruits and vegetables before unloading them into the grading machine.** This pregrading will help tailor the machine's parameters to the specific batch, based on criteria such as size, shape, and defects.

The expected outcomes include a **15% improvement in the grading process** and a **reduction in overall grading time by up to 20%.**



MULTISCAN specializes in machine vision and inspection solutions for the product inspection of agri-food products.



TECHNOLOGY DEVELOPERS

