Customer story
Phytocontrol

FUJITSU

Ensuring food safety and boosting healthy living with AI

Phytocontrol analyzes food samples to ensure they are free from contaminants and fit for human consumption. However, this manual process is time-consuming and exposed to human error. The company wanted to automate the process using AI and turned to Fujitsu to co-create a new solution with an intuitive interface, integrated with a new enterprise resource planning (ERP) platform. Now, samples can be processed in seconds and human error has been eliminated.

About the customer

Phytocontrol is an independent company, which specializes in water and food safety, offering a range of contaminant analyses for clients in the agriculture and agrifood, water, cosmetics, and pharmaceuticals sectors. Its primary laboratory is in Nimes, France, with additional facilities in Rennes and Barcelona. Since 2019, the company has been improving its processes by incorporating more data-driven techniques to increase competitiveness.

Industry: Agrifood | Location: France | People: 300+ | Web: phytocontrol.com

Challenge

Analyzing samples is a vital way to ensure there are no contaminants present in foodstuffs, however, it takes time and is prone to human error. Phytocontrol wanted to use AI to automate the analysis.

Solution

- Fujitsu AI platform for automated chromatography sample analysis
- Integrated with a newly installed ERP platform to bring data analytics closer to business operations

Outcomes

- Samples can be processed much faster
- AI platform eliminates human error
- Intuitive and familiar interface makes it easy to use
- Extensible, adaptable, and integrated approach enables digital transformation
- Solution can be extended to other contaminants

Analyzing for contaminants

Food affects the entire population and requires strict regulation to ensure contaminants and pollutants do not enter the supply chain. To enable this vigilance, agrifood businesses turn to special analysis companies, such as Phytocontrol, which use chromatography and mass-spectrometry to measure samples from processed products, raw inputs, and the environment.

However, these processes depend on skilled technicians and can take up to 30 minutes to complete. This can create a bottleneck for the thousands of samples that Phytocontrol processes per day. As part of a broader automation agenda, the company wanted to introduce AI and machine learning to make the analysis faster without compromising on accuracy.

"Farmers, distributors, and big brands need to prove that their produce meets compliance for public consumption, so they come to us," explains Eric Capodanno, Scientific Director at Phytocontrol. "But analyzing the chromatography depends on multiple parameters and criteria, so we need a dedicated team of 20 technicians to handle the sampling. Automating the process would eliminate bottlenecks and allow our customers to get analysis reports faster."

Introducing Fujitsu AI

Automated analysis of data from spectrometry systems, such as those used by Phytocontrol, had already been studied within Fujitsu's Japanese laboratories. Phytocontrol therefore asked Fujitsu to incorporate more wide-ranging AI techniques into a digitalization of its overall contaminant analysis pipeline.

AI techniques are now used to automate and accelerate data analysis, from peak detection in chromatograms through to a predictive capability trained with its extensive history of sample interpretations. The data architecture is integrated with a newly installed ERP platform to bring data analytics closer to business operations. This digital transformation has also enabled wider integration across detectors and the technician team, helping to build a foundation for new business services.

"It took Fujitsu and our team just three months to reach a minimum viable product and six more months to attain complete validation according to COFRAC specifications (Comité Français d'Accréditation: the French accreditation body)," continues Capodanno. "Now, we can analyze samples in seconds with maximum precision."

The new AI platform has been developed for three initial use cases: assisted interpretation, predictive control plan, and control plan modeling.

"Fujitsu has provided a flexible, easy-to-use, and accurate AI solution that has transformed how we analyze samples, speeding the process and eliminating human error."

Eric Capodanno, Scientific Director, Phytocontrol

1,000

samples are processed by Phytocontrol daily

Fast, intuitive, accurate

By automating chromatography sample analysis with an intuitive, user-friendly interface, Phytocontrol has reduced the burden on the technician team, enabling it to redeploy four employees elsewhere. At the same time, its customers can get faster results so produce reaches the shelves faster and fresher.

The AI has been well trained and never returns false negatives, while humans might get up to 2% wrong. And if analysis is incorrect it can lead to severe consequences, including fines and chronic risks to human health. Fujitsu AI eliminates this risk. And, because it is linked to the ERP system, results go direct to the customer with no need for manual entry – thus avoiding another potential area of error. All these factors combine to ensure healthier living for consumers.

"Fujitsu has provided a flexible, easy-to-use, and accurate AI solution that has digitally transformed how we analyze samples, speeding the process and eliminating human error," concludes Capodanno. "Following this success, we can now develop the same method for other contaminants."

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