

SMART AGR'HAUTS-DE-FRANCE

Project duration:

6 months,
from 01/04/2022
to 21/10/2022

Budget: 181 000 €

Partners:

Clubster NHL -
Eurasanté -
Euralimentaire
(leader),
DigitalFoodLab,
CITC



This collaborative project has been selected in the framework of the Call for Service Projects of the European **Smart Agri Hubs program**.

The objectives are the following:

- Develop new services to support digitization
- Promote collaboration between agri-food companies and technology providers
- To support digital awareness and digitalization of regional agri-food companies

The **SMART AGR'HAUTS-DE-FRANCE** project is organized around 3 modules:

Module 1: Acculturation to digitalization

Creation of a training module allowing the acculturation to digitalization in the agri-food and food-tech sectors. This training will allow to expose the panorama of digitalization in the food sector but also to learn from practices already in place in more advanced sectors.

Module 2: Expertise and technological support

Identification of the needs and opportunities of the region's agri-food companies in the industry and supply chain sectors via focus groups. This analysis will then be used to develop two training modules.

Module 3: Collaboration between the agri-food and digital worlds

Mapping of technology providers and organization for a BtoB matchmaking day to enable the collaboration between agri-food industries and digitalization players.



SMART AGRI HUBS

Connecting the dots

SmartAgriHubs is a €20 M EU project under the Horizon 2020 instrument and brings together a consortium of over 164 partners in the European agri-food sector. The project aims to realise the digitalization of European agriculture by fostering an agricultural innovation ecosystem dedicated to excellence, sustainability, and success.

To this end, SmartAgriHubs uses a multi-stakeholder approach and covers a broad value-chain network across all EU member states. The consortium includes a diverse network of start-ups, SMEs, business and service providers, technology experts and end-users. The end-users form the core of the project and are the driving force behind digital transformation. The development and adoption of digital solutions is achieved by a tight ecosystem of 140 Digital Innovation Hubs embedded within 9 Regional Clusters, which are led by organisations that are closely involved in regional digitalization initiatives and funds.

To learn more: www.smartagrihubs.eu/about

AGRI-FOOD INDUSTRY IN HAUTS-DE-FRANCE



Région
Hauts-de-France

Hauts-de-France is one of France's major food-processing powers.

As the 3rd largest agri-food region in France, it is a real key to the French and European markets.



More than
1.300
companies.



1st
region for exporting
agri-food products.



A turnover of
10 billion
euros.



3rd
largest region in France in
terms of workforce, with over
45.000 jobs.

The region is a real agri-food powerhouse and has built up a strong and diversified industry. In this ever-growing market, entrepreneurs who want to develop will find a complete ecosystem and development opportunities.

The development of the agri-food industry in Hauts-de-France is based on a strong and growing agricultural sector with know-how in several areas, as following figures show :



More than
€4 billion
in turnover from agricultural production.



More than
€1 billion
in turnover from animal production.

TRENDS AND CHALLENGES OF DIGITALIZATION IN THE AGRI-FOOD SECTOR AT NATIONAL AND REGIONAL LEVEL

The “industry 4.0” is still not very present in the agri-food industry worldwide. In Europe, France is lagging behind its neighbours, particularly Germany. Every day, the food industry faces unique challenges related to the complexity of industrial production, supply chain management, regulations and quality and traceability requirements. The food industry must also respond to the increase of customer demand for innovative, differentiated and easily accessible products.

One of the keys to adapting is through digitalization:

- **Digitalizing business processes**
- **Bringing transparency to supply chains**
- **Modernizing Information Technology (IT) systems**
- **Performing reliable analysis through Artificial Intelligence (AI)**
- **Leveraging the benefits of robotics**

Several companies reported that the introduction of digital technologies has rapidly transformed the way their businesses operate, with reduced information, transaction, and monitoring costs. To become more agile, responsive, and competitive, it is in the interests of the food industry to adopt a digital strategy and make the best use of the data created and collected by all its activities.

FOCUS GROUP RESULTS

OVERVIEW OF SUPPLY CHAIN & INDUSTRY ISSUES

Focus groups have been organized with several agri-food companies to brainstorm on the needs of the **supply chain** and **industry** and define the use cases of main interest. Digital experts have also shared with us the vision of their customers on that matter, gave us examples coming from several companies and helped us to understand better the needs of this sector.

After 4 hours of discussion on each subject, both groups agreed on the fact that agri-food companies are late compared to other sectors, in term of digitalization. To increase the use of digital technologies, attendees said that there is two level of action:

- Raising the knowledge in agri-food companies for them to be less scared to take financial risk regarding the implementation of digital technology in their factory. For that, diagnostic is a powerful tool to help the industry to focus on important matters and avoid bad experiment.
- Developing technology more adapted to the specific needs of this field of activities: supply chain and industry.

Needs and challenges:

Traceability is the main need of supply chain that digital technology can help to improve. For that, traceability tools like ERP already exist but the global strategy of the company must be defined and well communicate to the technology supplier. In storage area, RFID, data matrix or barcode can be used according to the factory needs. Adding technology to an organisation must be considered at the beginning of the project so that the one chosen fit well with the process in place.

Interoperability of software and centralisation of data are a real challenge. In fact, supply chain needs to be very reactive and for that, they need tools that allow them good anticipation (calculation of requirements, good predictive analysis, indicators...). The predictability of customer demand, thanks to AI, can allow to anticipate the activity in term of transport, storage, production and human planification, especially for young factories that have rapid evolution.

But the issue is that the chain is made of multiple interfaces, captors, softwares and global technologies, with their own protocols and standards, and it is difficult to have them communicate with each other. Moreover, in order to read the indicators properly, the routing and bill of materials must be the same for everyone in a factory.

An important need for both supply chain and industry is also to have a good interaction between human and digital technology. Technology is supposed to support the employee in his task, to let him focus on the task allowed. It must be user friendly

otherwise it will be an obstacle instead of being a help to his work. AI might be used as a support for training on the ground, to help them become more independent for a task. This might also be useful in case of vacation or turnover because it gives a standard operating procedure with no risk of losing expertise.

Regarding technology, agri-food industry would like to have a technological answer to work simultaneously on the same digital tool.

The use of online data would be a big step towards 4.0 Industry, as it will allow engineers to process and automatize the essential information.

On the same time, they find more and more sensor application in industry, especially in an aqueous medium or for acoustic signal. Those acoustic sensors are particularly useful for predictive maintenance.

Another technology for industry is digital twins, to integrate line automation using tools to optimise the whole industry.

With digitalization, the agri-food sector aims to find solutions adapted to the specific needs of companies. The technologies already exist, but the cultural specificity of this sector is slowing down their implementation.

One of the points of vigilance raised during focus groups is to find solutions that are adaptable to the different degrees of maturity of companies, as the challenges and new technological solutions require time and a significant investment from the companies.

Societal and environmental challenges are more and more part of their development. For that, Life Cycle Assessments (LCA) tools would be interesting to be developed more.

BENCHMARK ON EXISTING TRAININGS AND WORKSHOPS

Acculturation to digitalization for the agri-food sector Pilot training with DigitalFoodLab

As part of the project, a pilot training session on acculturation to digitalization was developed and delivered by DigitalFoodLab and Eurasanté, on September 22. The objective was to address both the opening and discovery of the innovation ecosystem as a whole and to study the impact of digitalization in these processes. Beyond the information, the participants were able to leave with ideas for concrete actions to be implemented around digital as well as inspirations for the long term.

Within the framework of the project, a benchmark was carried out on the organizations that provide support and training in digitalization in the agri-food industry (technical centers, associations, universities, schools, competitiveness clusters, etc.). Below are some notable examples. The complete document is available on request from the project partners.

France num: the national portal for the digital transformation of companies



France Num, through France relance, offers training to help small businesses get started with digital tools or to use them better to maintain or develop their business. Focused on concrete issues, these training sessions allow small businesses to experiment with proven digital solutions in response to a real need.

This portal is not especially for agri-food companies, but for all sectors of activity. The training courses are intended for very small enterprises (VSEs) and small and medium-sized enterprises (SMEs) that are just starting out in the digital world to help them get to grips with the tools and make them aware of the digital transformation.

www.francenum.gouv.fr

CERTIA INTERFACE

Certia interface is a non-profit association and a technological consulting structure serving agri-food companies, especially SMEs, in Hauts-de-France.

They have a specific service for digital transformation. The purpose of this service is to help agri-food factories to implement digital tool, according to their needs. They help to find the most adapted digital solution tools and contractors for each digital project and help to clarify the impact for the factory.

Moreover, they have produced a handbook to guide SMEs agri-food factories through the integration of digital technology in their work. You can find a French version on [this link](#).

They also made a webinar on the topic: "Agri-food and digitalization: what are the solutions for internal organisation of production lines". You can find replay in French [here](#).



CTCPA

The CTCPA is a technical center, dedicated to agri-food. As part of their job, they offer a complete catalogue of training courses for agri-food: trade courses, themed training courses in product processing, heat treatment, packaging, food safety, regulations, microbiology, and skills management.

More recently, they have developed many training courses about digital technology:

- Webinar: connected sensors to make your processes more efficient in January 2022
- Training on digital twins in March 2022
- Application of photonics in the food industry (quality: inspection of product appearance and packaging) in May 2022



INRIA

Inria is the French national institute for research in digital science and technology.

Since 2014, Inria created 26 Moocs covering a wide range of topics in Computer Science and Digital Sciences. Since then, more than 1/2 million registrants and 48,000 certificates have been issued. Most of these Moocs are free and open to permanent registration.

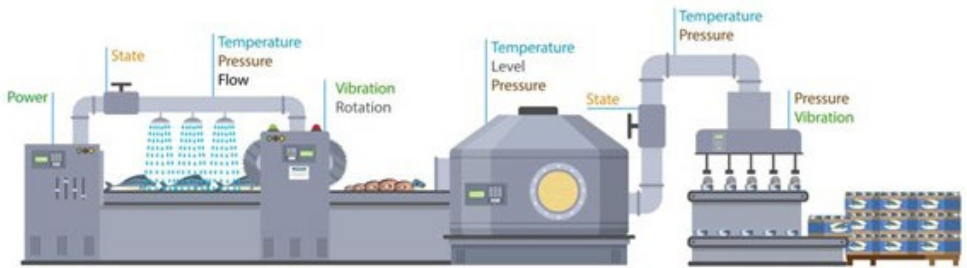
These Moocs cover many topics such as : Artificial Intelligence with Intelligence, Environmental Impacts of Digital, Internet of Things on microcontrollers and Internet Measurements to best train engineers and decision makers...

More information: www.learninglab.inria.fr/plus-de-500-mille-inscrits-a-nos-mooc

As part of its "Ambition 2023" Inria is developing a continuing education offer on digital technologies within the Inria Academy. The institute's objective is to support digital development by sharing with as many people as possible proven open-source software in major fields related to the economy, health, education, software security and machine learning. This training offer is aimed primarily at companies, particularly SMEs and ETIs, developing a job based in France and more widely in Europe. It will be deployed progressively from autumn 2020 and will be based in particular on software distributed as open source by Inria.

More information : www.inria.fr/fr/inria-academy

OVERVIEW OF EXISTING TECHNOLOGIES



The main technologies identified to meet the needs of supply chain and industry are the following:

Identification/traceability: Barcode, DataMatrix, RFID, Beacon

Localization/traceability: Bluetooth, Ultra-Wide Band, GPS

Transparency/Traceability: Temperature sensors, Radio network, Blockchain

Cybersecurity: Personnel awareness, Facility mapping and risk analysis, Defense in depth, Facility monitoring and incident detection, Incident handling, Alert chain, Recovery and business continuity plan

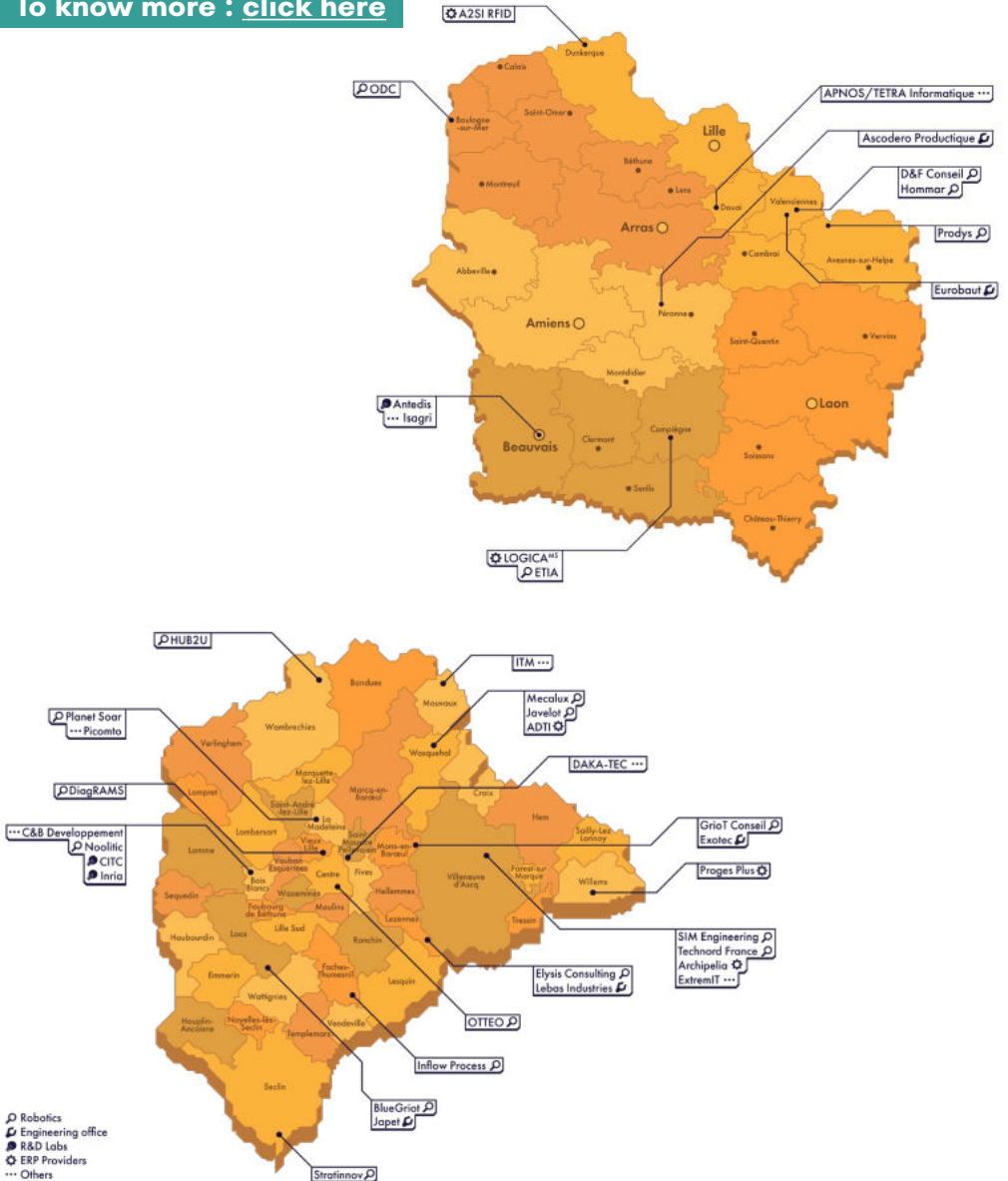
Artificial intelligence: Prediction and Optimization

Robotics/IA: Automated inventory, Order picking, Autonomous delivery, Automated quality control

Simulation/digital twins: Process improvement, Real-time virtualization

MAPPING OF EXPERTS AND SUPPLIERS OF DIGITAL TECHNOLOGIES IN HAUTS-DE-FRANCE AND THE LILLE REGION

To know more : [click here](#)



FUNDING OPPORTUNITIES FOR DIGITAL PROJECTS



In Hauts-de-France, a program "Industry of the Future" is deployed with the collaboration of Hauts-de-France Innovation Development (HDFID):

- **Diagnostic "Industry of the Future":** a 10-day consultancy diagnostic offered to SMEs and ETIs to identify the industrial performance tracks to activate. The Region and the State finance up to 80% of the cost of the service, 20% remains the responsibility of the company. A network of more than 120 accredited consultants operates in the region on the different areas of industrial performance. Recently, the search for "ZERO PAPER" and the optimization of information flow management are the most requested subjects. Many recommendations concern the modernization of their process via the development of digital tools such as ERP (Enterprise Resource Planning), CAPM (Computer Aided Production Management) and MES (Management of the Digital Production Chain).
- **Diagnostic "Robonumerique "** accompanies the robotic projects of SMEs and ETIs. Within the framework of a robotization project of a new and structuring function, aiming at optimizing production and reducing the drudgery of work, the support is concretized through the financing of the studies and/or the loan of the first robot.
- **Diagnostic " Pass Cyber Conseil "** aims at reinforcing the computer security of the SMEs of the territory. It allows for a computer security audit, a network architecture audit, an operating system audit as well as web security tests, intrusion tests, etc.

HDFID is a regional innovation agency responsible for raising awareness of entrepreneurs to take initiatives, leading, and coordinating the support system for the creation and acceleration of innovative companies, raising awareness of innovation, helping to set up innovative and performance projects, leading the research and innovation network, supporting the implementation of regional innovation, economic development, and research strategies.

More information : www.hautsdefrance-id.fr/accompagner-la-performance-industrielle-en-region-hauts-de-france/

At the national level, the portal for the digital transformation of companies France-Num mentioned above provides guides, advices and training courses and lists local actors and financial aid.

There are also funding opportunities for collaborative projects to support the digital transition of companies, particularly in the agri-food sector.

This is the case, for example, of the regional "Call for collaborative innovation projects Industry of the Future":

To enable companies, technical centers and research laboratories located in the Hauts-de-France region to work together on projects with a high degree of innovation, focusing on the major levers of competitiveness of industry, as described in the national reference system Industry of the Future:

- connected objects and industrial internet,
- advanced production technologies (including robotics, additive manufacturing, etc.)
- new approach to people at work / innovative organization and management,
- connected, controlled and optimized factories and lines/plots.
- New economic and societal models (integration of environmental and societal considerations).

Do not hesitate to contact Clubster NHL to learn more about the opportunities in progress: Amelie BAIN abaine@clubster-nsl.com

2 NEW APPLIED TRAINING SESSIONS DEVELOPED DURING THE PROJECT

As a result of the focus groups, two training sessions have been identified as relevant for the agri-food sector.

The first one is about digital twins that allow automatization for the agri-food industry. This training session target more large companies that are looking for advanced technologies to improve their productivity.

The second training session is about cybersecurity because it is a topical subject that can have an impact on all companies, of all sizes.

Those training sessions are pilots that might be provided by CITC.

DIGITAL TWINS content summary

- Simulation to test and improve logistics/industrial processes.
- Simulation to train AI
- The digital twin to feed the simulator
- Real data-training on real situations
- Real time visualization (e.g. logistics warehouse)
- Replaying incidents
- Adapting processes and adding to test scenarios
- The digital twin relies heavily on IoT technologies
- Identification-location
- Sensors
- Safety



CYBERSECURITY content summary

Raising user awareness of the risks associated with the use of IT tools (production, administration, management, etc.).
Strengthen the security of the company's information system.

- Raise users' awareness of risks associated with the use of IT tools (production, administration, management, etc.).
- Strengthen the security of the company's information system.

Objective

To protect against cyber-attacks that aim to harm smooth running of company:

- Data theft,
- Inoperable information system,
- Industrial sabotage,
- Loss of credibility...



AND NOW?

Would you like to be put in touch with a digital expert in the Hauts-de-France region? Tell us about a specific digitalization project?

Do not hesitate to contact the different partners of the project:

EURASANTÉ - CLUBSTER NHL — EURALIMENTAIRE



Eurasanté, as a specialized economic development agency, supports all players in the health-nutrition and aging well sector in the Hauts-de-France region in their research, creation and business development projects. Eurasanté animates Clubster NHL - Nutrition Health Longevity - a competitiveness cluster, as well as three start-up incubators: Bio-incubateur Eurasanté, Euralimentaire and Euraserior.



Clubster NHL is the only competitiveness cluster at the interface of nutrition and health at the national level, bringing together more than 350 members: start-ups, companies, healthcare institutions and institutes in research and training, in the agro-nutrition, medtech-hospitech, biotech-pharma, silver economy and e-health sectors. Its vocation is to stimulate exchanges and collaborations between the academic and industrial worlds in order to foster innovation.



Euralimentaire is the site of excellence of the European Metropole of Lille dedicated to fresh, local products and their logistics. Its mission is to boost the creation of innovative companies and jobs in the field of fresh produce in the metropolitan area.

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DIGITALFOODLAB



DigitalFoodLab is a FoodTech insight and strategy consultancy for food and beverage companies.

DigitalFoodLab helps its clients identify and act on the best foodtech opportunities.

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CITC



The Contactless Technology Innovation Center - EurarFID promotes the understanding of innovative contactless and Internet of Things technologies.

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