



# ATLAS

AGRICULTURAL INTEROPERABILITY  
AND ANALYSIS SYSTEM

## NEWSLETTER

ISSUE #1 • April 2020

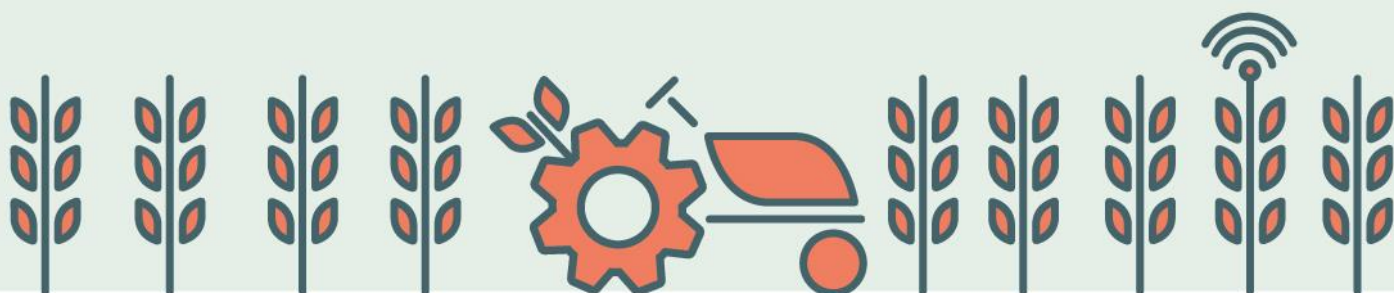
The ATLAS consortium welcomes you to our first newsletter!

Get acquainted with our project, partners and progress and discover what ATLAS aspires to succeed from our project coordinator's interview.

Read about several interesting ventures and find out the results of our first poll.

Don't forget to regularly visit our website which is rich in content, news and library items and follow us on social media.

Stay tuned and become an ATLAS insider!



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**ATLAS**  
AGRICULTURAL INTEROPERABILITY  
AND ANALYSIS SYSTEM



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 857125.



# ATLAS in brief

ATLAS aims to develop a sustainable ecosystem for innovative data-driven agriculture. Its goal is to achieve a new level of interoperability of agricultural machines, sensors and data services and enable end-users to have full control over their data and decide which data is shared with whom in which place. This will be achieved through an open, distributed and extensible data platform offering a high level of scalability from a single farm to a global community.

ATLAS will run for 36 months with 30 partners from 7 different European countries and with the support of innovative start-ups, SMEs and farmers, will enable new business models for and with the farmers and establish sustainable business ecosystems based on innovative data-driven services. Moreover, it will involve several actors along the food chain, simplifying and improving the processes from farm to fork, and with the digitalization of the whole process it will simplify communication.

The technology developed in ATLAS will be tested and evaluated within pilot studies on a multitude of real agricultural operations across Europe. Its test sites include 13 agricultural operations of which 5 are pure research farms, 6 are commercial farms and 2 are combined research - commercial farms. In particular, the project focuses on four cases: i) precision agriculture tasks ii) sensor-driven irrigation management iii) data-based soil management and iv) behavioral analysis of livestock.

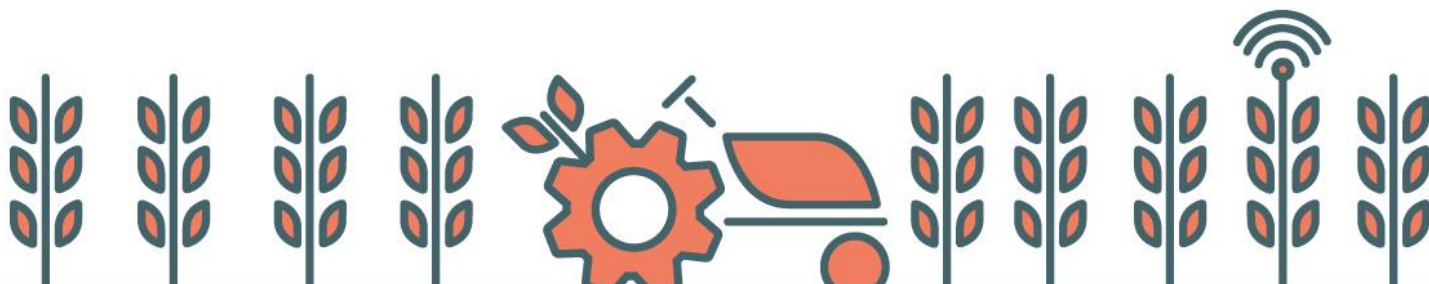
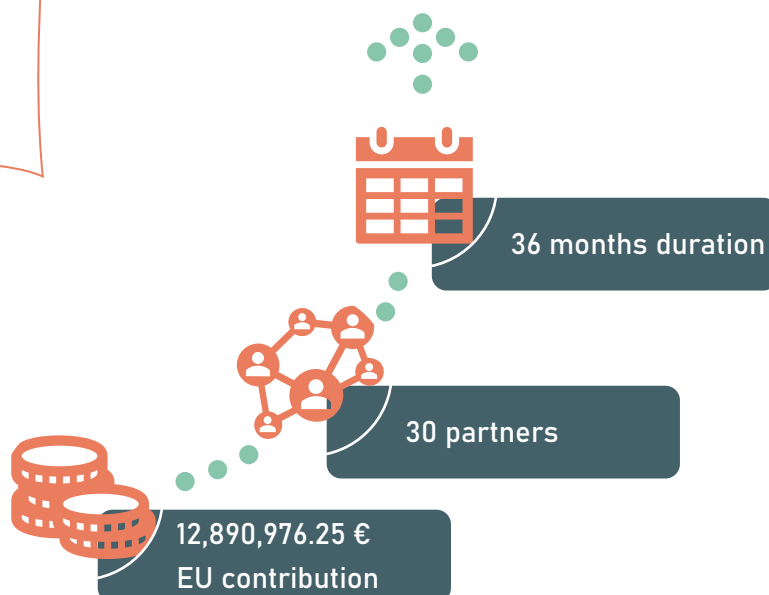
## 4 USE CASES

- data exchange between Ag machinery and data services
- sensor-driven irrigation management
- data-based soil management
- behavioral analysis of livestock

## 13 OPERATIONS

- 5 research farms
- 6 commercial farms
- 2 research & commercial farms

## Key Figures



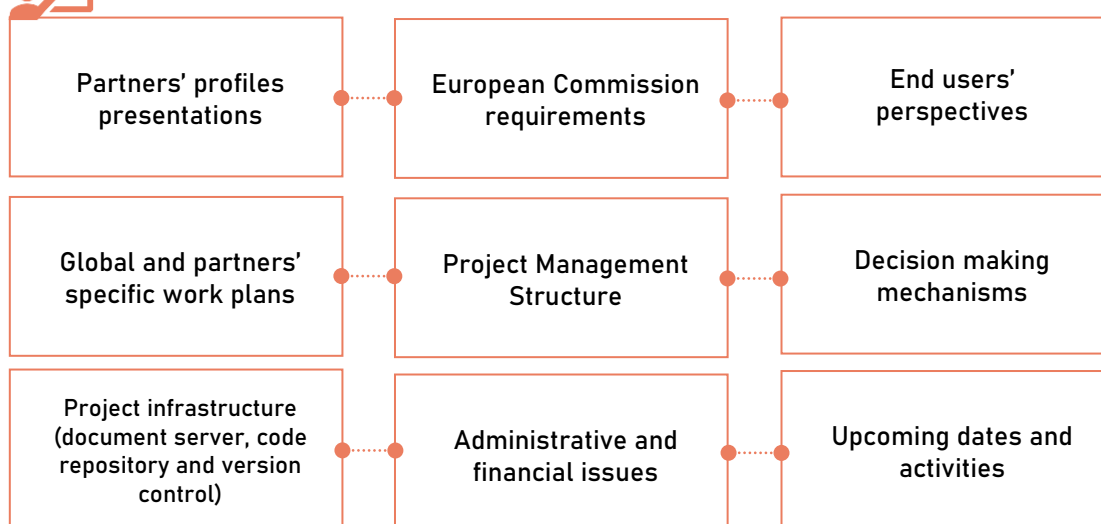


# Project kick-off meeting

The kick-off meeting of ATLAS took place in Fraunhofer IAIS on the 16th and 17th of October 2019. All 30 partners from Germany, Switzerland, Greece, Italy, Romania, Spain and Latvia attended the meeting, presented their organisations and illustrated their work plan. During the meeting, the end user perspectives both of farmers and the machinery manufacturing industry were highlighted. Also, the full work plan and the immediate upcoming activities were discussed, as well as the management structure and decision-making mechanisms of the consortium.



## KICK-OFF MEETING SESSIONS AND TALKS



# Expert's corner



An interview with Dr. rer. nat. Stefan Rilling, the Project Coordinator of ATLAS



Dr Rilling, what is ATLAS in your own words and what does ATLAS aspire to do?

ATLAS is a joint research project bringing together a multitude of stakeholders and researchers from the agricultural domain with the mission to achieve a new level of interoperability between agricultural machines, sensors and data processing services.



How does ATLAS deal with the need of interoperability between agricultural machines and sensors?

ATLAS addresses the interoperability with technical concepts that are comparable to the solutions found in today's internet technology: web-services connecting different cloud platforms from machinery manufacturers, IoT devices and digital service providers, as well as apps and mobile computers using standardized data protocols will be adapted to reach the intended interoperability between all actors involved.



Can you name a few right now problems that ATLAS will solve?

Today's agriculture actually is already digitized to a large extend. An average farmer has a multitude of different software tools in use. Modern agricultural machines are in some sense rolling computers. However, it is still difficult and cumbersome to bring all these digital tools together, and the same data has to be entered manually multiple times in different places. The methods of cultivation are already very mature, optimizing workflows and increasing yield further is very complex and requires the processing of huge amounts of digital data with a high spatial and temporal resolution, coming from a multitude of different data sources. A precise, data-driven agriculture can furthermore help to reduce the ecological impact and lead to a more sustainable food production through targeted and precise interventions on a very local scale.



How will the digital transformation shape the future of agriculture?

As already stated, modern agriculture is facing a multitude of environmental, economic and societal challenges. The sensibility of the public regarding environmental impacts is increasing, and there is a demand for sustainable produced food. The next generation of farmers needs to face these challenges, and the digital transformation is the key-technology enabling this.

*Do you need an expert's insight?*

The ATLAS consortium is formed by a strong team of experts who will be more than happy to answer your questions and provide more info on the project.

Contact us at [info@atlas-h2020.eu](mailto:info@atlas-h2020.eu)



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# Project progress

ATLAS reached its seventh month and it's a perfect opportunity to highlight our project progress. A wide variety of activities took place during these months, both preparatory and core ones. The various tasks and project actions have ensured that we are on track, and we are confident that we will continue to exactly follow our time plan.

- Service & Interoperability Architecture

The aim is the specification and implementation of the ATLAS interoperability architecture, building up the core functionality of the ATLAS platform and the foundation for the high-level services implemented in other ATLAS work packages. We are making good progress in this field. The works so far focused on defining a high-level architecture that guarantees safe and secure communication channels. This includes a standard way how data will be exchanged between multi branded machines and platforms and vice versa.

- Data Acquisition and Analysis Services

The aim is to develop data acquisition and analysis services so that data can be used for decision support purposes. The relevant deliverables are scheduled for later stages of the project. Nevertheless, a detailed work plan is already in place.



- Machine & Sensor Intercommunication

The tasks with regards to the integrated sensor system and the on-board processing unit are progressing. The focus now is on finding the right equipment (tractors and sprayers) to build the hardware on. The tasks related to cloud-to-cloud communication are scheduled at the end of the architecture design phase.



- System Integration and Testing

A software development infrastructure has been setup and is accessible by all ATLAS partners. A Jenkins CI/CD system along with a GitLab repository, and a Docker Registry. The GitLab projects also use webhooks to ensure that once a merge request is approved and performed corresponding Jenkins jobs would also get executed. Feedback from the Jenkins job will be provided in the GitLab.

- Pilots and Sustainable Ecosystem

Regarding the Pilots, the team responsible, has contacted stakeholders and had series of meetings to clarify requirements and to further define use-cases. Also, they are building up the livestock surveillance system.

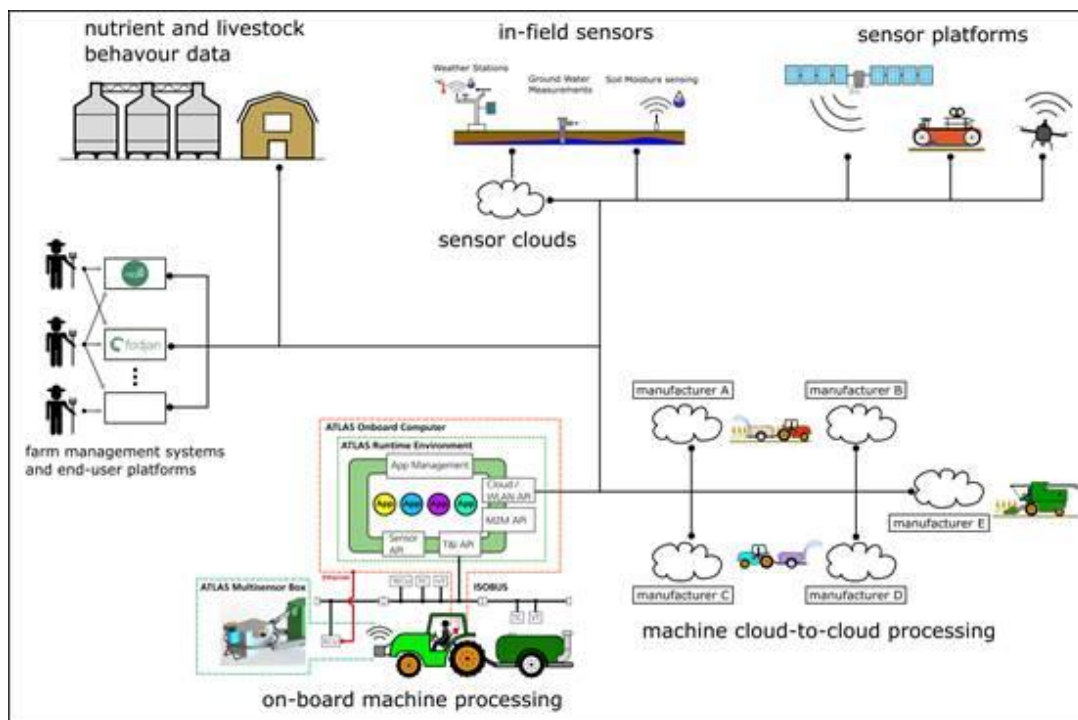


- Standardization & Business Sustainability

The tasks related to machine and sensors manufacturers' requirements are on track and relevant input has been provided. The questionnaires to assess both machine and sensor/platform manufacturers' requirements are finalised. Online surveys have been set up and their results will be presented in a meeting with all relevant partners in mid-May.

ATLAS will provide technology to access various kinds of data

- Interfaces to access on-board sensor data from agricultural machines.
- Interfaces to access data from in-field sensor networks.
- Interfaces to access data from data analysis services.
- On-board computers and runtime environments to run applications.
- Access to data repositories.



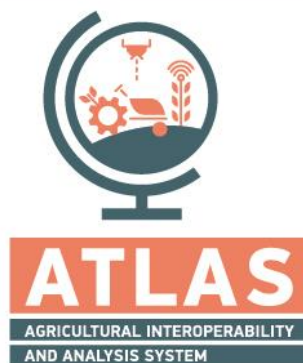
## Moments with the farming end-users



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# THRIVE top 50

For the third successive year **SVG Ventures (California, USA)** has published an annual ranking of the **TOP 50 growth stage AgTech companies**. These are some of the most innovative and disruptive companies in the world that are driving us towards a more secure and sustainable agricultural future. Out of the 50, we chose **6 companies** that triggered our interest because they have relevance with ATLAS technologies and under development solutions.



**AgriWebb**

Australia

AgriWebb is a developer of a farm management software designed to track and record the actions of livestock. Their software helps farmers to collect all the necessary data in real-time even offline and assemble it with full transparency. Agriwebb cloud-based farm management software aims to deliver a product that helps farmers digitize their business with a tool that drives efficiency through data-driven decision making. The goal is that, with this increased digitization of the livestock industry, AgriWebb can be the platform that allows transparency, profitability and sustainability across the supply chain [[website](#)].



**Farmobile**

United States

Farmobile is a leader in collecting raw data across farm equipment brands and creating a new standard for interoperable, portable data. Its digital technology enables farmers and channel partners to collect, share, and monetize agronomic and machine data. Farmobile's data collection device, known as the PUC, tracks fertilizing, planting, spraying, and harvesting activity layers in real-time, acting as a "Fitbit for farm equipment." The Farmobile Data Engine platform turns PUC-collected data into standardized data sets that can be imported into software and portable visual Electronic Field Records (EFRs) that enable farmers to gain insights, share with trusted advisors and power decision-making. Via cellular PUC automatically streams point-by-point raw agronomic and machine data –in real-time– directly from farm equipment sensors to the cloud where it is processed and stored. It works across equipment types and manufacturers and can stream data in low- or no-connectivity environments. The Farmobile Data Engine is a powerful platform that ingests and processes data for easy viewing and sharing. The raw data is transformed into standardized, visual Electronic Field Records (EFRs) that make data portable, shareable, viewable and useful for powering analytics or streaming into other systems and software. Subscribers can view, access, export and share their data 24/7 via any smart device via Farmobile Data Engine dashboard [[website](#)].



**Business Network**

United States

The Farmer's Business Network platform allows farmers to upload, store and analyze data coming out of the "AgTech" systems increasingly used to monitor weather, crop health, soil quality, and irrigation levels in the field. These systems include drones and satellites overhead, mobile apps, sensors and cameras on the ground. The company also empowers growers to analyze their own crop data in one report and compare their results with others' helping the industry as a whole to understand what's working in terms of new techniques or alternative products on the market [[website](#)].







# THRIVE top 50



## Resson

Canada

Resson is leading the technology evolution currently underway from precision agriculture to decision agriculture by equipping growers with productivity enhancement tools that make data-driven farming a reality. By combining data from multiple sources, recent breakthroughs in artificial intelligence, and the power of cloud computing. Resson's revolutionary solution integrates data from satellite, drones, close-proximity cameras, and in-field sensors to provide a comprehensive picture of exactly what is happening in every part of the farm. The predictive analytics solution from Resson goes beyond NDVI maps derived from satellite and drone imagery to virtually detect, classify, and geo-locate specific anomalies, pests and diseases in every part of the field. The key differentiation that Resson's technology brings is the unparalleled level of granularity to monitor and isolate specific issues based on the crop, and the region, or all the way down to individual plants [[website](#)].

## Fieldin

Israel

Fieldin's Control Center for specialty crops helps growers manage and optimize pesticide applications, harvest activities, and manage critical field operations in real-time. A smart farming platform seamlessly connects tractors, machinery and in-field sensors to provide managers with actionable data that improves production, transparency and efficiency in the field. Leveraging Fieldin's customizable dashboards, crop growers have been able to cut operational expenses. Smart Spraying Service removes the blindfold when it comes to the spraying activities with real-time spray data that ensures optimal timing and execution of spray events, as well as alerts for application errors such as missed rows, double sprays, or unsuitable weather conditions. Smart Harvesting Service optimizes harvest activities with real-time data for shakers (such as seconds per tree), sweepers, harvesters, and other equipment, allowing managers to compare machines, operators, shaking patterns as well as yield data from various locations [[website](#)].



## CropX

Israel

CropX is an innovative Ag Analytics company that aims to revolutionize and automate the farm and the decision-making process. This is done by combining above-ground data sets with real-time soil data measured by proprietary inhouse-developed soil sensors that transmit the data to a cloud-based platform to be integrated with imaging, weather data, topography and soil texture maps, crop models and many other data sets. Analyzed by AI-based algorithms, this provides insights and automations via the CropX app. CropX provides the first fully "do it yourself" farm management platform that offers, a scalable, user friendly, cloud-based, integrated hardware and software system. This system includes easy to install sensors with IoT connectivity and a patent-pending unique spiral design for unmatched accuracy that measure soil moisture, temperature, and electrical conductivity. The CropX software integrates additional field data such as location, soil type, topography, and crop models with remote sensing data such as precise weather and satellite imaging [[website](#)].



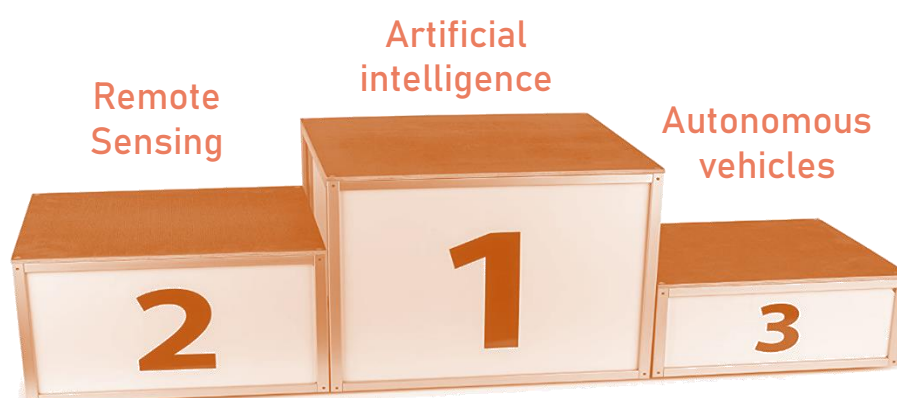


1st  
ATLAS  
poll

# What drives AgTech in 2020 and beyond?

- 5G
- Artificial intelligence
- Autonomous vehicles
- Blockchain
- Interoperability
- IoT
- Mobile devices
- Remote sensing

## TOP 3 DRIVERS ACCORDING TO 125 RESPONDENTS



## Upcoming events



21 April 2020, 14:00-15:00 CET

Governance for Digital Innovation Hubs

SmartAgriHubs first webinar



16 – 18 June 2020

DLG-Field Days – The meeting point for crop professionals

Gut Brockhof / Lippstadt, Germany



30 September 2020

2020 Forbes AgTech Summit

Salinas, California, USA



17 – 20 November 2020

EuroTier 2020 – The world's leading trade fair for animal production

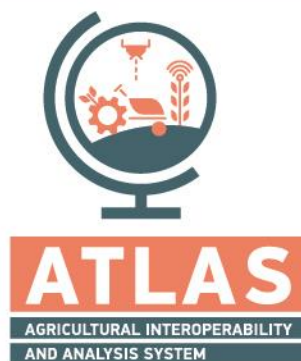
Hannover, Germany



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## What we are reading



### Kubota and Microsoft to launch AI Machine Learning Lab



Kubota will work with Microsoft to launch a new AI Machine Learning Lab focused on accelerating innovations. The Lab will be used to train new developers building AI solutions and Kubota will explore the application of AI in its business operations and for developing new services for customers in areas such as agriculture. Microsoft will leverage its knowledge and advanced technologies available within Azure Machine Learning to support Kubota's AI initiatives.



### BayWa launches Smart Farming Challenge



After 2 successful rounds, BayWa has extended its participation in the international Copernicus Masters innovation competition for a further 3 years. Start-ups, research groups and students, as well as private individuals, can now enter their ideas and technologies for sustainable satellite-based agriculture in the BayWa category Smart Farming Challenge at this year's event. The focus is on applications that combine data from space with artificial intelligence and machine learning, along with satellite-based solutions specifically intended for pasture management and the early recognition of plant diseases in arable crops, as well as yield forecasting in gardening. BayWa and its subsidiaries Vista and FarmFacts will act as mentors, helping the winner of the Smart Farming Challenge develop their innovation into a usable application for farmers.

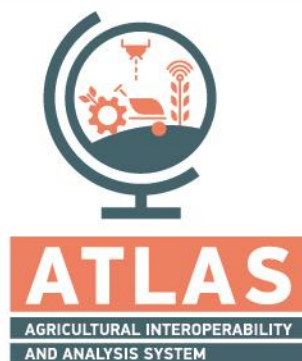


### Cubic Telecom and CNH partner in machinery connectivity



Following the establishment of this partnership, CNH can now deploy Cubic's connectivity platform. A fleet of tractors can gather real-time data to help farmers increase productivity. The partnership allows CNH's brands (Case IH, New Holland Agriculture and STEYR), to initially deploy Cubic's platform across tractor, harvester, and crop protection models, with possible further future expansion. Cubic's platform enables worldwide connections to LTE and 5G, so that CNH's brands' customers can keep remotely collecting and managing data on their terrain and machines to maximise productivity. Later, Cubic Telecom will be extending its connectivity solution offering within the CNH brand portfolio, to cover both IVECO commercial vehicles as well as CASE and New Holland Construction.





# Project partners



## PROJECT COORDINATOR

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