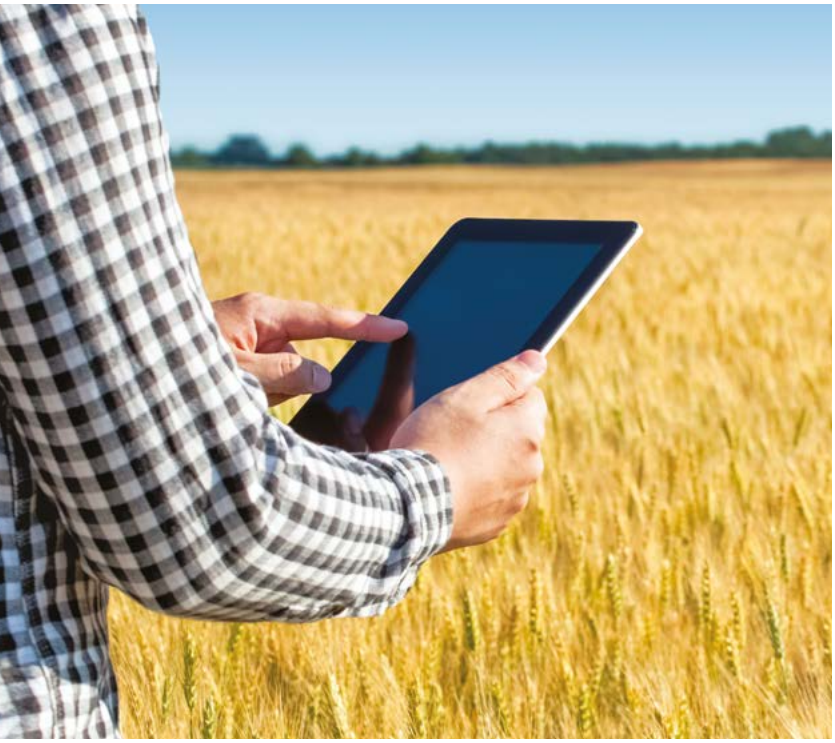
SIMA

PARIS INTERNATIONAL AGRI-BUSINESS SHOW

24 > 28 FEBRUARY 2019

Paris Nord Villepinte - France



PRESS KIT

Preview • November 2018

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EDITORIAL BY
FRÉDÉRIC MARTIN
AXEMA PRESIDENT, SIMA PRESIDENT

AGRICULTURAL EQUIPMENT: A SECTOR AT THE FOREFRONT OF INNOVATION PROVIDING CONCRETE SOLUTIONS FOR THE FARMING WORLD AND SOCIETY OF TOMORROW

It is with real pride that we open this 2019 edition of SIMA, which takes a 360° perspective on the diversity of agricultural production and the solutions offered.

An event for the whole sector, at a time when the challenges facing manufacturing and agriculture have never been so numerous.

A new opportunity to reposition the agricultural equipment sector as a strategic sector both in France and worldwide: indeed, agricultural equipment plays a role that is not only central but is also, and primarily, a driving force to support farms in their transformation.

An opportunity to discover and rediscover a rapidly evolving sector, at the forefront of innovation, focused on the future, providing concrete answers to the demands of farming and society: boosting farm profitability and competitiveness, alleviating farmers' workload, taking account of animal welfare, and respecting the environment and public safety.

Specifically in 2018, companies in our sector report having invested 4.1% of their turnover in R&D, with a view to developing innovative, ever smarter and more accurate solutions helping to accelerate a responsible transition of agricultural production.

Finally, a SIMA that is opening at a time when manufacturers are part of a more positive trend. They are experiencing a return to growth and investment and are recruiting to support the demand for production.

I have confidence in our ability to mobilise, to seize these opportunities together and to make concrete commitments in order to accelerate the progress of agriculture in every region of the world.

Wishing everyone a good SIMA!

ÉDITORIAL BY
MARTINE DÉGREMONT
SIMA DIRECTOR

SIMA 2019 :
A 360° PERSPECTIVE ON THE CHALLENGES FACING FARMING WORLD

As the international exhibition for all types of farming, SIMA once again looks set to be popular with participants in the sector. From 24 to 28 February 2019, exhibitors and visitors will come together around the theme of "Innovation for competitive agriculture" to address the challenges facing the sector. In this edition, SIMA is redoubling its efforts to provide real solutions for farmers from around the world.

INNOVATIVE

At a time when the "enhanced farmer" is an emerging topic of discussion, SIMA 2019 is the meeting place for innovation. **Two Start-Up Villages** will showcase new talent offering innovative solutions. **The Innovation Village**, including the Foresight Forum, will feature **profiles of innovative farmers and winners of the internationally acclaimed SIMA Innovation Awards 2019**. Another new feature of this 2019 edition will be a Hackathon in which coders and farming professionals will work together for 48 hours on the use of spatial data in agriculture.

INTERNATIONAL

With 1,800 exhibitors from 42 countries (in 2019), 232,000 trade entries from 135 countries and 360 international delegations (in 2017) **SIMA is the crossroads for all types of agriculture around the world**, as demonstrated by the rising numbers of international exhibitors (+12.5%). In 2019, besides conducting an active **visitor recruitment campaign in more than 90 countries**, the show will again host major events such as the **SIMA African Summit**, an international conference and practical tool for African development, and the **SIMA Dealers' Day**, which brings together distributors from all around the world to discuss training and the future of the dealership profession.

COMPREHENSIVE

In tune with the concerns of the farming world, SIMA takes a real 360° perspective on the diversity of production methods and solutions. For the first time, the exhibition and its partners will organise **round tables** on the major issues facing the farming world, such as **organic agriculture** (Agence Bio), **the cropping systems of tomorrow** (INRA), **agriculture in the digital age** (Agridées), and **livestock farming and AgTech** (Agridées, INRA). The latter will be the highlight of **SIMAGENA's Livestock Day**, an event acclaimed across Europe for the diversity of its cattle and the variety of its genetics hub.

SIMA therefore speaks to every type of farming, whatever the farm size or the production method, and more than ever stands in support of everyone involved in farming (manufacturers, farmers, breeders, distributors, dealers, opinion leaders, etc.).

SIM'AGENDA :
NEW FEATURES AND HIGHLIGHTS AT SIMA 2019

▶ AROUND THE THEME OF "INNOVATION FOR COMPETITIVE AGRICULTURE"

HALL 4

NEW! **THE INNOVATION VILLAGE**

Linked to the Start-up Village, this area aims to be both forward-looking and in touch with the current needs of farmers and manufacturers. To illustrate the current major trends in farming, this village will include the **SIMA Innovation Awards, profiles of innovative farmers** and **the Foresight Forum**.

For more information, see page 12

THE START-UP VILLAGES
in partnership with La Ferme Digitale

For this second edition, two Start-Up Villages will bring together young businesses offering solutions in tune with a fast-changing agricultural sector. The villages will also host five workshops organised by La Ferme Digitale, where participants can discuss opportunities in the sector and current hot topics.

For more information, see page 12

THE SIMA INNOVATION AWARDS

The SIMA Innovation Awards are an internationally acclaimed competition that recognises the most innovative materials, products, techniques and services presented by SIMA exhibitors. This year's panel chaired by Jean-Marc Bournigal selected 27 products for special recognition : awarding 2 Gold medals, 5 Silver medals and 20 Bronze medals.

For more information, see page 23

HALL 3 MEZZANINE, HALL 4 MEZZANINE, AND RING

NEW! **THE ROUND TABLES**

For the first time, the exhibition and its partners will organise **round tables** on the major issues facing the farming world, such as **organic agriculture** (Agence Bio), **the cropping systems of tomorrow** (INRA), **agriculture in the digital age** (agridées), and **farming and AgTech** (Agridées and INRA). The latter will be the highlight of **SIMAGENA's Livestock Day**, an event acclaimed across Europe for the diversity of its cattle and the variety of its genetics hub.

For more information, see page 56

HALL 2

SIMAGENA

SIMAGENA is the meeting place for French and international professionals in the field of cattle breeding and bovine genetics. In recent years SIMAGENA has become the benchmark for French companies working in genetic selection and the export of breeding stock.

NEW! A round table on livestock farming. **For more information, see page 49**

HALL 6 ROOMS 611 TO 618

AXEMA TECHNICAL MEETINGS

Axema continues its cycle of annual seminars aiming to bring together industry and academia around the R&D issues in agricultural machinery. In association with the Association Eurageng, the 3rd Axema technical meetings will be on the theme of **"Sustainable agriculture: an opportunity for machinery and systems innovation"**.

Saturday 23 February, from 8:45 to 18:00

HALL 4

NEW! **JOB DATING**

Held in a dedicated space, Job Dating offers recruiters and future employees the opportunity to meet and discuss recruitment projects (traineeships, apprenticeships or employment). The aim is to make initial contacts during 15-minute interviews. In parallel, visitors will be able to watch videos about the job and employer brand and find advice for applicants. Registration at: *https://jobagri.com/jobdating/formulaire_171018.php*

Monday 25, Tuesday 26 and Wednesday 27 February.

NEW! **SATELLITE AGRI' HACKATHON**

SIMA will host a hackathon *in situ* where coders and farming professionals will work together for 48 hours on the theme of "Agriculture and satellite data".
Sponsored by La Ferme Digitale, this focus group will aim to create synergies between the various partners and start-ups with a view to developing innovative technological prototypes using satellite data.

Monday 25 and Tuesday 26 February, ***round-the-clock for 48 hours***

NEW! **#WEARESIMA**

This year SIMA will be celebrating the women and men taking part in the show on its new Instagram account: **INSTAGRAM : @sima_worldwide**.

This is where to find profiles of the exhibitors, designers, manufacturers, distributors, dealers, farmers, breeders, partners and journalists from all around the world who help to make SIMA an unmissable event in the agricultural calendar.

▶ AROUND BUSINESS AND INTERNATIONAL

HALL 4 MEZZANINE

LE SIMA DEALERS' DAY

For its second edition, this symposium co-organised by SEDIMA and supported by CLIMMAR will address the theme of recruitment and employment across Europe *via* the experience of five leading countries: France, Germany, Italy, Switzerland and United Kingdom. CLIMMAR's President will set out its overall vision on this issue.
The Sima Dealers' Day is aimed especially at all distributors, importers and dealers attending the exhibition, as well as exhibiting manufacturers from all around the world.

Monday 25 February, from 10:30 to 12:30

HALL 4 MEZZANINE

LE SIMA AFRICAN SUMMIT

Agribusiness in Africa - "Positioning agriculture as a business sector"
2nd edition of the summit co-organised by AXEMA and SIMA, in collaboration with Farmer's Weekly magazine (South Africa).
Encouraging economic growth in rural Africa, mainly through agriculture and the agri-food industry, should be a priority of the African development agenda.
The topics covered will be: « Increasing agricultural production through technology and mechanisation » and « Building a dynamic agri-food sector in Africa ».

Tuesday 26 February, from 10:30 to 12:30

EXHIBITION PROFILE

AFCO Business Unit General Director: Laurent Noël	**Exhibition Director:** Martine Dégremont
Venue: Parc des Expositions de Paris-Nord Villepinte	**Opening hours:** 08:30 to 18:00
Dates: Sunday 24 February to Thursday 28 February 2019	**Frequency:** Biennial - Odd years
Date founded: 1922 - 78th edition	**Halls:** 2 - 3 - 4 - 5a - 5b - 6 - 7

IN FIGURES

1 800 companies from **42** countries including six new countries this year: Israel, Serbia, Slovakia, Saudi Arabia, Sri Lanka, Sweden

15 exhibition sectors:

- Traction
- Components, spare parts and accessories, onboard electronics
- Tilling, sowing and planting
- Plant protection
- Irrigation
- Harvesting
- Post-harvesting
- Equipment for tropical crops
- Handling, transport, storage and buildings
- Stock-breeding equipment
- Milking and dairy equipment
- Professional landscaping equipment, forestry equipment
- Sustainable development, renewable energies
- Management, IT, software
- Professional organisations, services, advice

232 000 trade entries from **135** countries in 2017

360 international delegations hosted in 2017

SIMAGENA

- **200** European farming and breeding exhibitors
- **280** animals
- **8** cattle breeds: Aubrac, Blonde d'Aquitaine, Salers, Charolaise, Montbéliarde, Normande, Holstein, Limousine
- Auctions, open shows, genomics presentations, demonstrations, etc.

A POPULAR EXHIBITION

Exhibitors:

- **88 %** satisfied
- **88 %** planning to return
- **50 %** orders placed during the show

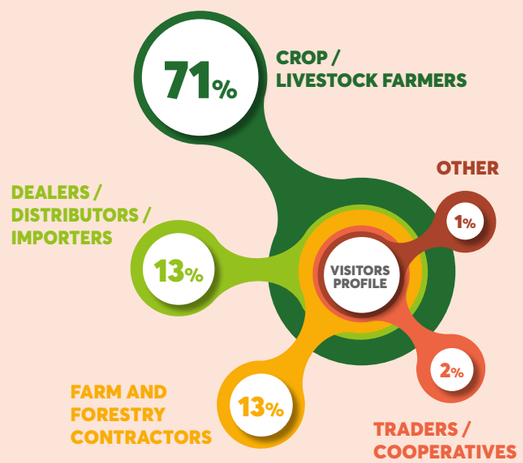
Visitors:

- **97 %** satisfied
- **93 %** planning to return

Sources : Exhibitor and visitor surveys, SIMA 2017

A QUALIFIED, DIVERSE VISITOR AUDIENCE

84 % buyers, **16 %** specifiers



FAST-DEVELOPING VISITOR PROFILES

Farmers with agricultural areas in excess of **200** hectares
Livestock farmers with more than **150** head herds

EXHIBITION MAP

SIMA
PARIS INTERNATIONAL AGRI-BUSINESS SHOW
24 > 28 FEBRUARY 2019
Paris Nord Villepinte - France

Equipment for tropical harvesting spread over the entire trade show

- A SIMAGENA International Business Club
- B Conferences Mezzanines halls 3 and 4
- C Job dating
- D Start-up villages
- E Innovation village
- F Concierge service
- G Organiser's office
- H Press service
- I VIP Club & International Business Club
- J International press stand

SIMA 2019 :
INNOVATION
FOR COMPETITIVE AGRICULTURE

Around its core theme of "Innovation for competitive agriculture", SIMA 2019 is more open than ever to the diversity of modern-day farming. Its wide range of content and events, co-hosted with partners and emphasising pragmatism and business, are proof of this.

THE INNOVATION VILLAGE

Linked to the Start-up Village, this area aims to be both forward-looking and in touch with the current needs of farmers and manufacturers. To illustrate the current main trends in agriculture, this village will host and group together in a single space:

The SIMA Innovation Awards: thanks to innovative digital scenography, visitors and exhibitors will be able to discover or rediscover the winning products from a new perspective. The 2 Gold medals, 5 Silver medals and 20 Bronze medals in this 2019 vintage once again illustrate the underlying trends in the sector:

SIMA INNOVATION AWARDS 2019

- **Profiles of innovative farmers** (in partnership with Nuffield AgrOnov and the French Chambers of Agriculture) highlighting initiatives and new practices developed by French and international professionals. Selected for their innovative nature but above all for their convincing results, these profiles are intended to inspire every visitor and exhibitor attending the show.

SIMA is above all about the men and women who contribute to its success. This year, SIMA will pay a daily tribute to them on its Instagram page @sima_worldwide using #WEARESIMA. This is where to find profiles of the exhibitors, designers, manufacturers, distributors, dealers, farmers, breeders, partners and journalists who help to make SIMA an unmissable event in the agricultural calendar.

The Foresight Forum: what is the lifecycle and creative cycle of an innovation? From initial idea to product launch, through design, experimentation and testing, SIMA will invite visitors and exhibitors to get involved in creating an innovation, give their opinions, attend demonstrations and test out new practices. Partners contributing to the Forum include:

agrOnov – Pôle d'innovation en agroécologie · INRA Science & Impact · list Ceatech · irstea · cetim

THE START-UP VILLAGES
IN PARTNERSHIP WITH LA FERME DIGITALE

Designed as a special show feature, the Start-Up Villages will be located in Hall 4 at the heart of the Precision Farming sector. The friendly Start-Up Villages will be a real springboard to help young businesses get noticed alongside the big names.

AgriCommunity is intended for professionals in the farming world. It enables geolocation and sharing of observations made on crop pests and diseases.

Agriconomie is a platform where farmers can find a wide range of agricultural products: fertilisers, seeds, filters, etc.

Agri-échange is an online non-cash platform for exchanging agricultural machinery services between farmers.

AgriSolution is a company that provides simple solutions to farmers. It is the inventor of Irricam, a camera that monitors farm irrigation at a glance. Connected by 3G to the farmer's equipment, the camera delivers sound and pictures to enable the farmer to check on the progress of irrigation. This simple and effective solution uses the farmer's smart phone as an interface.

Airinov maps fields with unprecedented precision thanks to its drones. Like an X-ray or a scanner, the Airinov drone sees what the human eye cannot pick up, and enables farmers to monitor plants at key moments in their development.

Aptimiz boosts farm profitability and improves farmers' day-to-day lives by giving precise information and control of their working hours.

Captain Farmer (Agritel) Captain Farmer is the essential solution that helps farmers sell at the right time using an intuitive and personalised approach.

Carbon Bee is the developer of a hyperspectral camera for farming drones, agricultural robots and cameras for tractors.

ClicParcelle is an application that enables farmers to manage their work, yields, harvests and quality, and even their partners and costs.

ComparateurAgricole.com compares the best agricultural offers available directly from farms. The site offers to sell farmers' cereals, wheat, barley, maize, rapeseed, etc. on a futures basis and to buy their fertilisers at the best price.

Ekylibre is an open-source management application for connected, sustainable farming.

EnerBIOflex is an independent consultancy firm specialising in energy for the farming world. It supports farmers in their energy-related activities (optimisation of energy supply contracts).

Exotic System designs connected devices for vehicles, industry and agriculture: the goal is to help its customers to "grow connected".

FarmLeap is a service platform for farmers wanting to improve their performance by sharing their knowledge and simplifying the management of their land.

Farmviz works on ways to anticipate agricultural yields for farmers and cooperatives.

Go4ioT supports small and medium-sized businesses without special skills in connected devices, helping to deploy solutions to optimise their operations and maintenance. It also offers KHIKO, a professional tracker to protect devices against theft in the agricultural and construction sector.

HKTC Technologies designs, develops and markets machines capable of working wholly independently, with no human intervention during operation. Its expertise is based on guidance, automation, hydraulics, mechanised welding and data collection.

Javelot is the first connected thermometry solution for grain storage.

Ker'innov Your vehicles under control. Enhance productivity and safety with My-Optimo.com by having everything about your equipment at your fingertips on your smartphone, tablet or computer.

Lituus develops innovative IoT based solutions to provide the livestock farmers with a decision support tool. Their first product is a new generation smart collar for diary and beef cattle.

LV Digital is a service company for the agricultural sector. It manages websites such as the online portals www.traktorpool.de/fr (second-hand agricultural equipment) and www.baupool.com/fr (buying and selling of construction equipment).

MiiMOSA is the first crowdfunding site for agriculture and food.

Naïo Technologies specialises in agricultural robots and autonomous guidance.

Perfarmer offers a tool to help farmers optimise their crop rotation, technical sequences, input buying, cereals marketing or mechanisation strategy.

Piloter sa ferme (Bipilote) develops tomorrow's economic steering tools based on the increasing digitisation of services, the mathematical power of algorithms and good old "farming common sense".

Precifield scans soil variability to tailor interventions locally and generate savings. The innovation concerns new interventions and crops: irrigation, plant health products, etc. in vineyards, open fields and horticulture.

SAMSYS designs innovative, easy-to-use interfaces and digital tools for the management of agricultural equipment for cooperatives, contractors and farmers.

Tip Tap Pro enables farmers to receive information relevant to their job (alerts and podcasts) while listening to their favourite radio station as they work.

VotreMachine.com is the first agricultural machinery rental site created by farmers for farmers.

Weather Measures focuses on precision meteorology and maximising the value of multi-source meteorological data.

THE SIMA ROUND TABLES

AGRICULTURE IN THE DIGITAL AGE

In just a few years, the development of digital technology has shaken up the whole value chain in agriculture. Faced with the challenge of "producing more and better, to feed an ever-growing population" thrown down to those in the sector, the connected (or indeed enhanced) farmer's answer is "smart, decision-based farming".

This new moderate, qualitative approach is made possible by three key elements: **big agricultural** data, which collects, stores and processes information; **precision agriculture**, which holds the potential to reduce input use and environmental impact; and **automation and robotisation**.
The goals of this innovative approach are to improve the **economic and environmental sustainability** of agriculture and farms, to optimise the quality and traceability of agricultural production and to enhance **farmers' quality of life**, making the profession more attractive.
The approach is also strategic in that it should enable farmers **to overcome hazards**, as well as multiple complex risks, all of which are difficult to anticipate, measure, manage, reduce or avoid.
However, for this trend to become established, several challenges remain to be met: building an environment conducive to **business development** (launch and development of AgTech start-ups), working to ensure that **needs and innovations are perfectly matched** in terms of relevance, accessibility and ease of use, and developing **specific training** for designers and users of digital tools.

BIG DATA AND AGRICULTURE: COLLECTING DATA AND IMPROVING ACCURACY

Statistics are used to support agricultural performance, including in **yield modelling**, a technique that allows highly accurate prediction of crop and livestock performance.
The quality of raw data and the power of processing tools have seen significant improvements. Modern farming is affected by this trend, not only at the stage of agricultural production (on farms) but also upstream (among the suppliers of technology - machinery, genetic material - and services) and downstream (transport and processing, sale to the end consumer).
Digital technology and big data can be found in every category of AgTech: e-commerce platforms, agricultural biotechnologies, farm management software, sensors and the Internet of Things.

PRECISION AGRICULTURE: TOWARDS DECISION-BASED FARMING

Precision agriculture has been boosted by the **development of GPS, GNSS** (Global Navigation Satellite System), **aerial drone images and the latest generation of timeless images produced by satellites**. These allow the creation of maps identifying spatial variations in aspects such as crop yield, soil characteristics, soil structure and organic matter, and moisture and nitrogen content. Precision agriculture therefore allows tailor-made agriculture, made possible thanks to tools that quantify intra-plot spatial and temporal variations in multiple parameters (soil quality, diseases, yields, etc.) and **aggregate all of these data to guide farmers in their decision-making.**

FOCUS ON SENSORS

The agricultural machinery world is increasingly equipping itself with onboard or embedded sensors (tractors, drones, robots, etc.) or fixed sensors on production sites to capture and record information that is held centrally in the farm's IT systems. **Thanks to digital technology, agricultural equipment is becoming more economical, smarter and more accurate.** Sensors also assist in **weather monitoring**. This is becoming increasingly important as the impact of climate change is beginning to make itself felt. As digital technology has developed, therefore, large numbers of connected weather stations have sprung up.
Finally, sensors are now becoming autonomous thanks to autonomous wireless sensor networks (AWSNs), a promising new technology that will complement existing solutions and help to anticipate risks.

AUTOMATION AND ROBOTICS: AN INVALUABLE AID FOR THE FARMER

From drones to robotic arms to autonomous tractors, technology is being deployed in a wide range of innovative applications.
Whether in crop monitoring and analysis, fertilisation and irrigation, or weeding and spraying, robots are now found everywhere and are helping farmers with their day-to-day work. They allow farmers **to combine production with respect for the environment**, while reducing the workload involved in farming.
Using artificial intelligence, these tools can now identify and analyse situations based on the data collected, and take action or alert the farmer accordingly. This means that the farmer can **rely on customised recommendations** in real time. **Algorithms enriched with artificial intelligence** also learn from their experiences and circumstances, becoming ever more precise.
In another concrete example, manufacturers are now offering **driving assistance devices**, including automatic guidance systems, for work in the open field. Agricultural machines can also be remotely **controlled by satellite**. Equipped with smart systems, they can carry out field operations more autonomously and based on real-time data analysis, in complete contrast to previous years.
Finally, the **advent of the autonomous tractor** is also a reality with several models now on the market, some of which were unveiled at SIMA 2017.

DIGITAL TECHNOLOGY FOR THE SHARING ECONOMY OR CO-FARMING

With the help of digital technology, agriculture's cherished idea of "working together in networks to be more efficient and effective" has really taken off. Nowadays many digital platforms exist to connect participants in the farming world with others beyond their immediate neighbourhood.
Platforms for renting agricultural equipment between farmers, for direct selling of local agri-food products, for exchanging land, leveraging advice, sharing technical and economic data... every idea is a good one when it comes to bringing farmers closer together.

TRAINING DESIGNERS AND USERS TO FACE THE NEW CHALLENGES OF DIGITAL TECHNOLOGY

Supporting the development of digital technology in agriculture also means training designers and users alike. Indeed, to design AgTech tools, designers need to combine the skills of data scientists with those of agronomists. Mathematicians specialising in big data remain few in number, and the dual skill set of data scientist/agronomist is very rare. To address this, UniLaSalle has set up a Master of Science in "agricultural data management and decision models" and AgroParisTech offers an advanced module in decision support systems ("IODAA") in collaboration with Paris-Dauphine University and its Master's in IT and smart systems ("ISI").

In addition, 1994 saw the creation of the **AgroITC specialisation**. This aims to train professionals who have skills in both farming and information technology.
The training is centred around a professional project based on a contract with a company. It encourages an entrepreneurial spirit in its students by introducing them to the innovation process. To strengthen this approach, AgroITC created the **Innov'Agro challenge** in 2014. The principle is to have students work in multidisciplinary teams to design and create new services for agriculture/environment using innovative technologies.

Finally, a "Digital Agriculture" Business Chair was established in late 2016. Supported by Montpellier SupAgro, Bordeaux Sciences Agro and IRSTEA, and created with 24 partner companies, the Chair facilitates interaction between digital technology companies working in the agriculture/environment sector and applied research and education in the field.

On the user side, the emergence of digital precision and decision-making tools requires everyone involved in agricultural production (farmers, advisers, etc.) **to upgrade their knowledge and skills**. It is therefore important to ensure that cooperatives or agricultural equipment manufacturers get the best value out of the training offered by the technology providers themselves (MOOCs, distance learning, etc.).

Source : agridées (www.agridees.com)

ROUND TABLE

Enhanced agriculture: a reality today and tomorrow
Offered by AXEMA and SIMA,
organised with agridées.
Hall 3 - mezzanine, Monday 25 February - from 10:30 to 12:30.

CONFERENCE

Symposium of the international #CoFarming association
Hall 4 - mezzanine.
Tuesday 26 February - from 14:30 to 16:30.

FARMING AND AGTECH

After precision agriculture, precision livestock farming has now become a must! Its objective: to assist farmers in their decision-making by supplementing their observations with **the use of sensors** to measure animals' behavioural, physiological or production parameters and **the input of new technologies** to exchange, store and reproduce the information collected.

Yields, milk quality, raw material prices, weather, etc.: by providing access to a vast array of data, precision livestock farming techniques enable farmers to improve performance and costs while offering multiple advantages in terms of animal welfare and human health (workload, ergonomics, etc.). By monitoring their animals in this way, farmers can detect health or feeding problems at a very early stage and predict the consequences. Digital technology is also an accelerator of performance and precision in the genetic selection of farm animals.

Precision livestock farming is therefore becoming more widespread thanks to the arrival on the market of sensors (heat detection, calving surveillance, detection of health problems, feed management, etc.) and applications (machine adjustment, herd monitoring, price and market information, etc.). This trend is accompanied by the growing use of robotics in livestock farming to cope with a shrinking workforce and respond to the desire to improve working conditions.

ASSISTANCE AT EVERY STEP

Precision livestock farming affects every step of the work and supports farmers in all of their day-to-day tasks:

Precision feeding

Although the composition of livestock rations is already geared to the species, age and sex of the animal as well as to the prices of raw materials, etc., recording health status information in real time allows feeding to be tailored precisely to the animals' needs and the farmers' objectives. The impact on productivity, environment and budget is substantial because animals are fed in an optimised and waste-free way.

Keeping an eye on calving

Sensors are also key elements in remote monitoring of the temperature of a cow ready for calving. They offer the ability to reduce human intervention, as farmers are only alerted in the event of an incident.

Veterinary care at the right time

Sensors also play an important role in early detection of diseases, by monitoring the animals' feeding, temperature and activity. This prevents overuse of antibiotics, antibiotic contamination and related production losses. Sensors are real allies for rural areas with a desperate shortage of vets.

Herd geolocation

Some solutions offer the option of designing a virtual fence system, enabling farmers to remove physical fences and monitor the herd even at a distance. The animals are fitted with a transmitter-receiver collar equipped with a GPS. Thanks to real-time herd geolocation, on a computer, tablet or smartphone, farmers can be sure that their animals are still within the virtual zone.

MULTIPLE APPLICATIONS FOR TAILOR-MADE SUPPORT

Rapid development of information and communication tools, especially applications, allows farmers to exchange, store, process and reproduce the information collected.

For example, these tools offer the option of collecting data from multiple farms and analysing them to help as many farmers as possible to make the right decision. Other (highly specialised) tools assess the risk of sub-acute acidosis in dairy cows based on photos of dung or, based on a milk sample, enable farmers to find out a cow's somatic cell count during milking by consulting a smartphone screen. There are also tools for managing infection with bovine viral diarrhoea virus or for managing plots of land in a rotational grazing system.

Some applications also gather a set of specialised data according to type of farming. For suckler cows for example, data on administrative requirements, breeding management, health monitoring and performance analysis can be collected, enabling farmers to easily identify the cows to be monitored (ongoing treatment, drug persistence, vaccine reminders, calving dates, etc.) and improve their procedures.

PRECISION GENETICS

Digital technology is also an accelerator of performance and precision in the genetic selection of livestock: digital technologies allow more detailed and faster exploration thanks to high-throughput phenotyping and genotyping techniques. These techniques improve genetic performance, working more accurately and more efficiently, using aids such as marker-assisted selection, site-directed mutagenesis and genome editing.

AGTECH FOR TRACEABILITY

Digital technologies are also powerful allies of traceability. One example is RFID (Radio Frequency Identification), a technology which allows remote reading and works through matter. **It also has the advantage of being able to modify the available information in real time.** An unparalleled technology to meet agri-food traceability needs, right from the farm gate.

Another recent example is blockchain. Blockchain is a transparent, secure technology for information storage and transmission that operates without a central control body. A blockchain is a secure database that contains the history of all exchanges made between its users since its creation. It is shared by its different users, with no intermediaries, which allows everyone to check the validity of the chain. Overall, therefore, the system creates a chain of dated and unalterable data. Blockchain can have a range of applications (such as asset transfer, smart contracts, etc.). Used as a register, it ensures optimum traceability of products and assets.

ROUND TABLE

How AgTech increases the profitability of livestock farming
Offered by AXEMA and SIMA, organised with agridées and INRA.
Wednesday 27 February, from 13:00 to 15:00

HOORAY FOR ROBOTICS!

Robotics has assumed an important role in livestock farming. First of all, the milking robot became a must-have in every parlour. In the future, it will be forage distribution robots and robots for cleaning and scraping exercise yards that will be in the spotlight. Robots are taking on the heavy work to save the farmer time but also to increase efficiency.

Nowadays, the use of ICT is changing the work of farmers and making their lives easier. This is a real positive step forward. However, for this to be effective in the long term, farmers need to find space in their working day for the time required to use, maintain or repair sensors and other tools, as well as to read the results and analyse the data provided.

It is also essential that this trend does not reduce farmers' time for their animals or impair their ability to recognise clinical signs of disease, which will have health consequences if the technology fails.

Source : agridées (www.agridees.com)

ORGANIC AGRICULTURE: PROVEN GROWTH AND DYNAMISM

Driven by rising consumption of organic products, the growth and dynamism of organic farming is increasing all the time. "Organic" remains the major growth factor for the food sector.
Indeed, 85% of French consumers believe it is important to develop organic farming. There are many reasons for their enthusiasm: 91% believe it helps to preserve the environment, 89% believe it is good for health and 75% believe that organic farming creates employment.

ORGANIC IN A NUTSHELL

Organic farming is a method of production and processing that respects the environment, animal welfare and biodiversity, and offers potential solutions to climate change.

Organic food is produced from ingredients grown without synthetic chemicals and without GMOs (genetically modified organisms). It contains no flavour enhancers, colourings or synthetic chemical flavourings. The use of additives is strictly limited.

Organic farming is based on respect for animal welfare. Animals must have access to the outdoors and plenty of space. They are fed with organic feed coming mainly from the farm and are treated first and foremost with alternative medicines.

Organic products are inspected at every stage. Besides the checks carried out on all agri-food products, specific organic inspections are conducted by an independent body approved by the national authorities. The European organic logo and the French "AB" logo guarantee that the product complies with the rules of organic farming.

Organic farming is at the heart of sustainable development. It represents a commitment to the well-being of future generations.

ORGANIC FARMING IN A FEW KEY POINTS

Living, fertile soils

Maintaining or increasing soil fertility is a top priority in organic agriculture. This objective is achieved by:

- appropriate crop rotation, allowing the soil to recover;
- growing green manure crops and legumes;
- recycling and composting organic matter;
- using fertilisers and soil improvers of natural origin.

Agriculture with no synthetic chemicals or GMOs

Organic farming regulations prohibit the use of synthetic chemicals such as pesticides, resulting in a range of benefits for the environment and consumer health.

Respect for water quality

Practices specific to organic farming allow farmers to avoid contamination of surface water and groundwater and to reduce its nitrate content. Organic farmers limit the amount of organic fertiliser they use to fertilise their soils. Organic methods therefore make a major contribution to maintaining or improving water quality.

Agriculture that promotes biodiversity

Expectations in terms of health and quality are fuelling demand for organic products, but consumers and players in the organic sector are also motivated by a desire to contribute to protection of the environment.

In fact, by respecting the balance of nature and the diversity of plant and animal species and by banning the use of synthetic chemicals and GMOs, organic agriculture is helping to preserve the planet. The development of organic farming is also promoting the expansion of traditional farming practices.

HOW TO COMMIT TO ORGANIC FARMING?

For those wishing to commit to organic farming, Regulation (EC) No 834/2007 and its implementing legislation specify the provisions to comply with concerning organic crop and livestock production.

Several steps need to be followed:

Consulting applicable legislation. Summaries are available by type of production; these can be consulted on the websites of certification bodies and professional organisations.

Contacting a professional organisation (GAB, Chamber of Agriculture, CIVAM, etc.). All of these organisations offer specialists who can provide advice and help to fine-tune your plans.

Finding out about the public grants available. Conversion and maintenance grants have been introduced for organic farming (applications must be submitted before 15 May each year as part of the CAP declaration), together with a tax credit. Grants for certification and investment are also available in some regions.

Applying for a quote then committing to an approved certification body. After inspection and once the conversion period is over, this body will issue the operator with a certificate allowing it to sell its products as organic.

Reporting in parallel to Agence Bio. Once validated by the certifying body, the operator will appear under the relevant headings in the official directory of operators committed to organic farming.

THE DIFFERENT GRANTS AVAILABLE

Various types of public grant specific to organic farming are available to farmers and it is vital to know about them. The system essentially consists of:

Conversion and maintenance grants

The unit amount of funding per hectare varies depending on the type of crop. It is based on the average additional cost entailed in organic farming compared to production costs in conventional agriculture.

Tax credits for organic farming. In addition, local authorities (regions and departments) have introduced other forms of assistance: grants for certification, installation, investments, etc. Finally, a number of other mechanisms, integrated into the Agri-Environmental and Climate Measures (MAEC), also concern organic farming. These measures are designed to support farms involved in developing practices that combine economic and environmental performance, or in maintaining such practices where they are at risk of dying out. This is a key tool for implementation of the French agro-ecology programme.

ORGANIC AGRICULTURE AND JOBS

In 2017, it was estimated that organic farming accounts for nearly 134,500 direct jobs (jobs on organic farms plus jobs in processing and distribution): 16,500 more than in 2016. Since 2012, 49,200 direct jobs have been created, with an average annual growth rate of +9.5% over the past 5 years.

Agricultural employment declined at an annual average rate of -1.1% from 2010 to 2015, whereas organic agricultural production gained 10,669 full-time jobs between 2016 and 2017: i.e. +13.7%.

Source: Bilan annuel de l'emploi agricole (BAEA), Agreste Chiffres et Données Agriculture no 238, July 2017

GANIC PRODUCTION ON THE RISE

As at 31 December 2017, there were 54,044 operators engaged in organic farming, up by 14.7% in a year. Of these operators, 36,691 are producers (4,425 additional farms in a year, up by 13.7% compared to 2016), bringing the proportion of French farms committed to organic farming to 8.3%.

In 2017, more than 5,000 farms committed to organic farming. At the same time, the number of producers giving up their organic certification has fallen (representing 3.5% of producers committing to organic in 2016).

ORGANIC ACREAGE ON THE RISE

At the end of 2017 the area under organic farming in France was 1,744,411 ha, an increase of +13.4% compared to 2016.

Of this acreage, 1,233,800 ha were certified organic. This +17% increase on 2016 is due to the entry into organic production of areas converted in 2015, especially arable and fodder crops.

Source : Agence Bio (http://www.agencebio.org)

ROUND TABLE

Why and how to commit to organic?
Offered by AXEMA and SIMA, organised with Agence Bio (French Agency for the Development and Promotion of Organic Agriculture), in partnership with Biofil.
Hall 3 - mezzanine
Tuesday 26 February, from 10:30 to 12:30

AGRONOMY:
DESIGNING TOMORROW'S CROPPING SYSTEMS TODAY

Crop production is faced with the aims of increasing production performance and reducing environmental impact. These are major challenges for the cropping systems of tomorrow.
Several original approaches can be considered in order to change habits and practices. First of all, we need to explore how to increase the **Land Equivalent Ratio (LER)** beyond 1. The possibilities offered by **intercropping** (better use of different soil horizons) and **catch crops** (occupying the soil for longer) can be considered to increase the LER. The second approach involves **closing the nutrient cycle, especially that of nitrogen**. Reactive nitrogen is an element that is essential to food and feed, in the form of protein, and to plant growth in the form of ammonium or nitrates. However, it is also a water pollutant where nitrates are present in excess, and a powerful greenhouse gas when in the form of nitrous oxide. It is therefore essential to close the loop more efficiently.

INTERCROPPING... SELECTING AND COMBINING THE RIGHT SPECIES AND VARIETIES

In the monospecies populations that make up the majority of cultivated ecosystems, plants are in competition for abiotic resources because they exploit the same ecological niches.
In multi-species populations, on the other hand, two key processes have been identified which explain the better performance of these systems, namely niche complementarity and facilitation. Interactions between species occur both above ground, where plants compete to intercept solar radiation, and at root level, where they absorb water and nutrients. The spatial partitioning of a soil resource between two intercrops occurs where the two crop species have different rates and depths of rooting. The same applies to the use of light where the intercrops have complementary canopy structures and/or growth dynamics. Niche complementarity at a biogeochemical level typically applies to cases of intercropping between a legume and a non-nitrogen-fixing species, and is related to the legume's ability to fix nitrogen from the air. This complementarity is enhanced if the species are grown in a situation with low availability of nitrogen inputs.

In situations like these, intercrops have shown better performance in terms of biomass production and yields, but also in terms of nitrogen status and ultimately protein content of the cereal. Facilitation occurs where one species is able to mobilise a pool of soil-borne resources that were initially unavailable, thanks to rhizospheric processes triggered by the other species, as recently demonstrated in the case of phosphorus.

CATCH CROPS... AN EFFECTIVE LEVER!

The idea of a catch crop has clearly shifted, depending on the benefit needed, from the concept of green manures to nitrate-fixing intermediate crops (fast-growing crops intended to protect plots in between two cash crops) in the 1970s to 1990s, to today's multi-service cover crops (MSCCs). MSCCs are used to generate ecosystem benefits in between crops. They are not harvested, but dug in or left on the surface of the soil.

MSCCs yield different ecosystem services at the same time, with varying degrees of efficiency depending on the species or mixture of species sown, management methods, soil and climate conditions, and the succession of cash crops with which they are interspersed. The benefits are in terms of nitrogen management (nitrate-fixing effect), physical soil protection, carbon storage, reduction of bio-aggressors (weeds, pathogens), pollination and landscape aesthetics. The package of services that MSCCs can deliver and the possible trade-off between them must be explicitly defined in order to select the right species or design the right mix of species to be planted. Many different botanical families can be used as MSCCs (including cruciferous, graminaceous, leguminous and composite plants).

However, it makes sense to select species that do not act as hosts to diseases or pests affecting the main crops, so as to limit any negative effects ("dis-services"). And to maximise the ecosystem benefits provided by a mix of species, the combination should also allow for good complementarity of development and growth. With well-chosen species managed by appropriate technical sequences, MSCCs can therefore be an effective lever for the "greening" of French cropping systems, without necessarily having to radically transform the system or the level of tillage.

CLOSING THE NUTRIENT CYCLE

Agriculture and livestock farming influence the carbon and nitrogen cycles that underpin plant and animal production. Open cycles lead to losses and wastage of nutrients, soil organic matter and energy, as well as to problems with water and air pollution and greenhouse gas emissions.

The cycle can be closed more efficiently by planting legumes, in either single or combined crops, by encouraging farm-level or regional interaction between crop and livestock production and, lastly, by improving the biological life of the soil and increasing the organic matter content. As with the LER, a measure of cycle closure and environmental impact helps to improve farm management.

Planting legumes, either singly or in combination

The planting of legumes, either as a single crop or in combination, is possible both as a main crop and as a cover crop. In both situations, legumes generate biomass with little or no use of synthetic nitrogen fertilisers (ammonium nitrate). Introducing these crops into production contributes to a significant improvement in the nitrogen balance, since the production of vegetable protein is based on symbiotic nitrogen fixation. There is no nitrogen leaching under the crop, as nitrogen fixation adjusts to the plants' needs and, if there are non-leguminous crops in the cover, their growth will be based on nitrogen derived from mineralisation of soil nitrogen. In addition, whereas inputs of nitrogen fertiliser are accompanied by nitrous oxide emissions, symbiotic fixation by leguminous crops does not produce this powerful greenhouse gas. *Via* these different mechanisms, therefore, the planting of leguminous crops significantly improves the closure of the nitrogen cycle.

Interactions between plant and animal production

Encouraging the coexistence of crops and livestock, and interaction between them, within the same farm or region, is one way to increase the environmental performance of agricultural production and to bring about a genuine agro-ecological transition.

Interactions between the three elements of mixed systems (crops, grassland and livestock) are essential: simple coexistence of activities, complementarity, synergy within a farm, synergy within a region. Interaction leads to innovations that seek to diversify crop rotations, make the most of semi-natural areas and optimise intercropping.

Many experiments have confirmed that physical integration and complementarity between crops and livestock are essential to improve the environmental performance of the farm and reduce nitrogen losses.

Improving the biological life of the soil and increasing the organic matter content

Grassland contributes to the regulation of biogeochemical cycles, mainly due to organic matter accumulation in soil, sequestration of atmospheric carbon (a process of carbon storage in the soil-plant system, mitigating greenhouse gas emissions responsible for climate change) and reduction of risks of nitrogen leaching to hydrosystems. Gaining a better understanding of the functions and flows of organic matter under grassland is essential in order to strengthen its environmental role. The different management methods that humans apply to grassland affect the dynamics of soil organic matter (SOM) and hence the biogeochemical cycles of carbon and nitrogen.

Sources: INRA - Demeter 2017 - Innovations Agronomiques - Fourrages

ROUND TABLE

Designing tomorrow's cropping systems today
Offered by AXEMA and SIMA, organised with INRA
Hall 4 - mezzanine
Saturday 24 February, from 10:30 to 12:30

SIMA INNOVATION AWARDS

INNOVATION IN AGRICULTURAL EQUIPMENT AND MAJOR TRENDS 2019

By **Jean-Marc Bournigal**, chairman of the judging panel
And **Gilbert Grenier, Frédéric Vigier, René Autellet**, technological advisers to SIMA, judge rapporteurs

Each successive roll of honour of the SIMA Innovation Awards serves as a revelation of underlying trends in the changes and developments underway in farming equipment, user concerns and the responses provided to them by manufacturers and suppliers of solutions.
Unsurprisingly, the field of digital applications clearly dominates the role of honour in this 2019 edition, winning nearly the half of all medals awarded. Indeed, solutions are increasingly mature and their fields of application increasingly vast.
Another trend relates to the need for user safety. Manufacturers supply reliable responses which are either very technologically advanced or simply a matter of common sense.
Finally, requirements for machine working quality and performance represent a third major trend, driven, in particular, by the growing complexity of crop rotation and cultivation and wider crop variety.

1. DIGITAL TECH IN AGRICULTURE: FROM COLLECTING RELIABLE DATA TO LEVERAGING THEM FOR INCREASINGLY ADVANCED DECISION-MAKING, TO ACQUIRE NEW AGRONOMIC KNOWLEDGE

For example, the Limacapt system by **De Sangosse** companies and **Cap 2020** (**Bronze Medal**) helps to count and monitor the activity of slugs throughout the night. This tool, which is more efficient than manual traps, thus enables highly detailed analysis of the risks caused by this pest, and therefore provides information to take the right decisions for action.

In the area of extensive farming, **Beiser Environnement** offers a connected fodder rack (**Bronze Medal**) which can both alert the breeder in the event of lacking fodder and, more importantly, to monitor the daily fodder consumption of the herd.

Monitoring machine activity is an issue which manufacturers have been trying to address since the beginning of the 1980s. This year, various manufacturers offer solutions dealing with the need for the automatic and reliable recording of machine activity. This is the main sticking point (zero data entry) which persists before the industry can go even further in measured agriculture and the leverage of agronomic data.

The connected meter by **Karnott** (**Bronze Medal**) is an entirely autonomous device which can be used to monitor the activity of any item of farm equipment, from carried implements to containers for trucks. Powerful algorithms process positioning data to calculate the activity of the equipment, journeys resulting from transport and work, working width and the surface area covered. It thus simplifies the generation of works slips and invoicing.

The RFID A-100 Asset Tag by **Trimble** (**Bronze Medal**) monitors the activity of farm equipment but using a quite different method: these Bluetooth tags reliably identify any non-Isobus implement coupled to a tractor and the driver in attendance. This identification incorporates Isobus implements (already recognised by the tractor display), non-Isobus implements and drivers in the work performance log. In addition, this tag automatically sets the display's auto guidance function according to the width of the implement that is recognised.

The Climate FieldView platform by **Climate Corporation** (**Bronze Medal**) also incorporates an automated machine data collection system with the Field View Drive terminal. This device, plugged into the tractor's OBD, collects data from whatever tractor and Isobus machines are being used. The Climate Fieldview platform then enables the user to analyse the data collected, by cross-referencing, for example, machine work data (yield, application of inputs) with soil maps, remote sensing images, etc.

The analysis of agronomic data becomes all the more useful and relevant when it is possible to collect information on crops at very regular intervals.

This is what **Bosch** proposes with the Field Sensor (**Silver Medal**) in association with the start-up Hiphen. The system combines field sensors (weather station, soil probe and multispectral camera) with remote sensing data sources. The aim of this system is to match very high spatial resolution data (remote sensing images from drones and/or satellites) with very high-repetition data (one image per day of the same zone of the field).

It is the same type of approach that **Airbus Defence and Space** and **John Deere** have adopted with Live Nbalance (**Silver Medal**): very accurately and regularly monitoring nitrogen uptake by the crop in order to detect the early signs of any anomalies and achieve, at the end, a precise balance between nitrogen input and crop uptake. Here again, the aim is to bring together remote sensing data (with a frequency of under a week) with machine data on the date of treatment, quantities and - for organic fertilisers - the content of these amendments. It can be noted that designing innovative services is increasingly a matter for partnerships between players which each contribute their specific know-how and skills.

Digital technology is also about Precision Farming applications and, in particular, the possibility of modulating actions during work. This is what is offered by **Case IH** with its connected electrical weed killer (**Bronze Medal**). This implement is an alternative to the use of chemical herbicides and works by electrocuting weeds. Its efficacy is piloted directly from soil and weather data. Depending on the designated zones, the tractor's forward speed will vary in order to guarantee the maximum efficiency of this "digital weeder". The tractor speed variation is enabled by the use of an Isobus class 3 connection (control of the tractor by the implement).

This type of control is also a major trend in this 2019 edition, as illustrated by the increasing number of applications of Isobus class 3 at the present time.

Precision Farming also requires the transmission of modulation maps from the farm management computer to the tractor display and, in return, the collection of working data. With the AutoSync system (**Bronze Medal**), **Trimble** offers a solution which greatly simplifies all these exchanges by making them entirely straightforward, seamless and instantaneous. In real time, data can be exchanged, shared, corrected, etc., between the central computer and the displays of several tractors.

Digital technology is also used in maintenance (improving breakdown detection, maintenance operations, etc.).

The **John Deere** Connected Support (**Silver Medal**) combines the highly-detailed preventive detection of breakdown risk, based on the behavioural analysis of machines drawing on data collected from thousands of machines all over the world, with the management of alerts and maintenance priorities in the dealership. This improves the reactivity of the technicians in the dealership. Their tasks are scheduled to reduce travel time and coincide with machine downtime to avoid disruption to any ongoing work.

The **KUHN** Redvista application (**Silver Medal**) uses augmented reality technology to help the machine user or the dealership technician conduct exhaustive and regular maintenance of machines. It helps to optimise the functioning and lifespan of the machine and its components. This application adds an entertaining aspect to crucial tasks such as servicing and adjusting machines.

This use of digital technology to simplify and facilitate tasks which are often time-consuming is also behind the vocal assistant Fernand proposed by **Isagri** (**Bronze Medal**). Fernand is a computerised personal assistant to help farmers in their everyday tasks, based on voice recognition and artificial intelligence. This voice assistant gives simple and fast smartphone access to essential information found in management and operational software.

2. MACHINE WORK QUALITY AND PERFORMANCE IN VIEW OF MORE COMPLEX CROP OPERATIONS AND WIDER CROP VARIETY

Digital technology can help to substantially improve the work quality of machines such as for example self-guiding systems based on GPS RTK enabling high pass accuracy, in particular when carrying out mechanical weeding.

Nevertheless, technology should not neglect the basic principles of applied physics, the first of which is the notion of tractor-implement linkage and "convergence".

The DynaTrac offered by **Laforge** (**Gold-Medal**) is a universal guidance interface for implements coupled behind the tractor (not specific to an implement and/or to particular conditions). This DynaTrac interface allows the implement tool to move independently from the tractor. The whole implement/interface and tractor unit is free. The trajectory correction is established by the pulling line. This is defined by the lower arms converging intersection as viewed from above. The modification of this geometry corrects deviations without creating any other restriction on the tractor or the implement (no need for trajectory maintenance discs). Trajectories are more accurate, and equipment can work in better conditions.

Claas, meanwhile, lifts the major obstacle to the use of crawler tracks in agriculture, in particular on forage harvesters: ground churning at headlands which leads to soil deterioration. On the Jaguar 960 Terra Trac (**Gold-Medal**), an ingenious system raising the front roller is triggered beyond a certain turning

angle, reducing U-turn churning and therefore the deterioration of topsoil. The average pressure of the remaining surface area (approximately 60%) is even lower than a set of standard tyres.

Still in the perspective of protecting soil, central tyre inflation solutions are becoming more widespread. Their adoption is sometimes hampered by relatively long inflation or deflation times to adjust between field pressure and road pressure. **Sodijantes industrie** proposes an innovative solution in its Tank Air Wheel (**Silver Medal**), directly incorporated into the wheel rim, immediately next to the tyre to be inflated. With this integrated system, which is compatible with all types of tyres, inflation time is substantially reduced. It is possible, almost immediately, to obtain the right pressure in the right place and at the right time.

In the area of cereal and row crop harvesting, farming is shifting towards a wider variety of crops, thereby entailing more complex harvesting conditions. To cater to these challenges, **Claas** offers the Convio Flex header (**Bronze Medal**) which enables the harvesting of all types of crop (laid cereals, rape seed, peas, fava beans, grass seeds, etc.) and very close to the ground if necessary. This cut is totally flexible at cutter bar level. The shape of the header reduces loss of product without requiring the use of compressed air nozzles. The conveyor belt, moving proportionally to the forward speed, feeds the harvest regularly into the threshing units.

The work quality of machines also relies on good design but also the optimisation of their conditions of use. In the area of centrifugal distributors, the final distribution is partly affected by the influence of wind on the projection of fertiliser. **Amazone** proposes its WindControl system (**Bronze Medal**) whose role is to instantaneously measure wind characteristics during spreading and modify the settings of the implement accordingly (notably the dropping points of the fertiliser pellets on the discs). The quality of spreading therefore remains constant, regardless of the effects of a moderate wind. The system alerts the user in the event of excessive winds so that they can stop spreading.

Still in the area of application quality, the Blaster sprayer by **Arbos** (**Bronze Medal**) uses an articulated chassis where the rotation pin, instead of being placed on the drawbar as on most trailed sprayers on the market, is placed near the rear axle, which itself is close to the boom. This original arrangement offers the advantage of keeping the boom perpendicular to the initial trajectory and therefore treating crops along the full width, as close as possible to the end of the field at the same time as the tractor begins its U-turn. In addition, the turning radius of the coupled unit is substantially reduced (less than 4 m).

The performance of machines also applies to their fuel consumption. Lowering this consumption is both a legal obligation and a matter of common sense. With the Eco-Stop function (**Bronze Medal**), **Manitou** helps to substantially lower fuel consumption and increase the lifespan of the engine by reducing its idling periods. The Eco-Stop fitted to Manitou telehandlers shuts down the engine when the operator leaves the cabin, after a period of time which is adjustable according to driving patterns and seven measured criteria. This intelligent system is a response to an observation: 30% of the running time of a farm telehandler happens with the engine idling and the driver absent from the cab.

Standards in terms of machine performance are increasingly stringent, raising their prices and making their maintenance particularly sophisticated. On its sprayers, **Berthoud** offers the long-term rental solution Berthoud Rent (**Bronze Medal**) which combines a rental contract with a comprehensive service to monitor, check up and maintain the machine on site. The originality of the Berthoud Rent service lies in the possibility of including within the contact the cost of wear parts (including nozzles) and two visits per year (conducted by the dealer and a Berthoud technician).

The end-of-life of machines is also at the heart of concerns. This is the issue that Manitou has taken on in its process for the re-use of **Manitou** telehandlers at the end of their useful life (**Bronze Medal**). The organisational, economic and environmental approach adopted by Manitou offers a perspective for the reuse of equipment components for a second - or subsequent - life. The holistic nature of the approach is rewarded here, combining life-cycle analysis, streamlining of operations and a search for technical value capture.

3. SAFETY, WORKING CONDITIONS AND HEALTH IN THE WORKPLACE: REQUIREMENTS INCREASINGLY TAKEN INTO CONSIDERATION BY MANUFACTURERS

Safety imperatives affect all sectors of farm production; many operations, machines or situations are potentially a source of accidents or could lead to problems such as musculoskeletal disorders (MSD). For many years, manufacturers have been trying to make their machines and their internal components less dangerous, often surpassing applicable legislation.

In this way, **Claas** offers the Torion Sinus wheel loader **(Bronze Medal)** fitted with a double steering system comprising a central articulated joint plus a rear steering axle which improves the manoeuvrability and stability of wheel loaders. The system reliably and safely combines the advantages of the two steering methods regularly used on loaders: a central articulated joint, which offers the advantage of pushing in-line with the front axle, (but reduces rear overhang when manoeuvring and increases the risk of accident), and four-wheel-drive which is safer when turning (which has the disadvantage of not pushing straight on a bend).

Another source of serious accidents relates to when machines block up and the temptation to unclog them by hand. To prevent this, **New Holland Agriculture** proposes a DFR reverser system (**Bronze Medal**). When a machine blocks up, the Dynamic Feed Roll reverser enables the operator to remove blockages without leaving the cab. The system comprises a hydraulic actuator, a ratchet system and a toothed wheel on the DFR shaft. When this blocks up, the system warns the operator via the cabin display. The operator can then safely start the unblocking procedure which includes reversing the rotation direction of the DFR and that of the conveyor belt.

The safety of operators is also put at risk when exposed to products that are potentially hazardous for their health. In order to reduce these risks, **Kverneland** offers a new microgranule distributor for precision drills (**Bronze Medal**), designed to mitigate the risk of contamination due to exposure to crop protection products which make up the microgranules. Isolating the full hopper and redesigning the way the metering wheel is removed eradicates the risk of contaminating the operator through contact with the crop protection microgranules during metering wheel changeovers, even when the hopper is full.

In the area of heavy machinery, the phases of hitching and unhitching three point carried implements are well-known at-risk situations. These risks have grown greater with larger implement sizes and the use of particularly heavy hydraulic push bars. To address this substantial risk, **Hydrokit** has designed a “Third hand for top link” kit (**Bronze Medal**). This kit, which can be fitted to any tractor, comes in the form of an electrically-controlled winch that helps the user to hitch and unhitch the hydraulic push bar (the top link) behind the machine and couple and uncouple the machine’s transmission shaft on the tractor. It thus reduces the effort required and the risk of musculoskeletal disorders, injuries and crushing accidents during these two types of operation.

In the field of livestock, risks mainly relate to the behaviour of animals which could either charge at the breeder or take advantage of a poorly-closed gate to escape. The wide gate with Surlock by **Jourdain** (**Bronze Medal**) consists of an easy-to-use locking system for gates. Easy to open for the breeder, the lock functions in both directions. It locks with a simple push. In animal husbandry, gates are opened and closed several times a day; the Surlock system offers breeders a simple and safe system to use every day when working with animals.

Finally, the cleaning and disinfection of animal sheds are tasks which are often difficult and painstaking. The Lavicole system designed by **Rabaud** (**Bronze Medal**) is a remote-controlled livestock shed cleaner. This system provides greater convenience and ease of work for cleaning tasks. The operator steers and monitors operations remotely using a remote control. They are less exposed to splashes from water and dirt and no longer have to carry out repetitive and tiring movements with the high-pressure gun.

WINNERS OF THE SIMA INNOVATION AWARDS 2019

CLAAS	Forage harvester with suspended rubber tracks	5b F 103-104
LAFORGE	Implement guidance interface	4 H 019
AIRBUS DEFENCE AND SPACE & JOHN DEERE	Live monitoring of N-balance based on satellite imagery and machinery data	4 K 037 5b A 018
BOSCH FRANCE	Live monitoring of vegetation using in-field connected sensors for crop management assistance	4 K 050
JOHN DEERE	Proactive and collaborative support for farm machinery	5b A 018
KUHN	Virtual assistant for routine machine maintenance and adjustments	5a G 032-E 032
SODIJANTES INDUSTRIE	Wheel with an integrated air tank	4 K 015
AMAZONE	System for monitoring and compensation of effect of wind on spread fan	5a C 013-014-031-032
ARBOS FRANCE	Trailed boom sprayer with independent wheel suspension system, adjustable wheel track and articulated chassis	4 F 002
BEISER ENVIRONNEMENT	Fodder rack with galvanized trough, trailer mounted rain protection with connected weighing	4 K 023
BERTHOUD	Long-term leasing solution	6 B 028
CASE IH	Connected electrical weed killer	5a E 002
CLAAS	Flex draper Wheel loader	5b F 103-104
CLIMATE FIELDVIEW	Digital ag platform that gives data-driven insights to maximize return	4 J 037
DE SANGOSSE & CAP 2020	Self-powered connected sensor for counting and monitoring of slugs	4 L 042
HYDROKIT	Upper linkage and cardan shaft hitch assistance	3 F 023
ISAGRI	Voice assistant for farmers	4 G 012
JOURDAIN SAS	Automatic two-way gate locking device	2 B 011
KARNOTT	The connected meter that simplifies the monitoring of your tasks	4 G 011
KVERNELAND GROUP FRANCE SAS	Microgranule distributor	6 H 058
MANITOU GROUP	Time-controlled and adjustable engine cut-off on telehandlers Re-use of telehandlers at end of useful life	7 F 100 - C 113
NEW HOLLAND AGRICULTURE	DFR Reverser	6 B 027
RABAUD	Remote controlled chicken rearing shed washer	5a C 051
TRIMBLE	Auto Asset Selection with use of Bluetooth Tags Automatic data sharing across the farm	4 H 024

GOLD MEDALS

CLAAS (FRANCE)

Forage harvester with suspended rubber tracks

Commercial name:
JAGUAR 960 TERRA TRAC

CLAAS, renowned for its range of TERRA TRAC crawler track units for combine harvesters, has just lifted the main obstacle to the use of crawler tracks on forage harvesters: churning up the headland during turning manoeuvres. An automatic system raising the front drive roller substantially reduces the shear effect when working on crop cover (grass or alfalfa). This system is intelligently triggered beyond a certain turning angle without damaging soil structure. Indeed, the average soil pressure exerted by the remaining surface area (approximately 60%) is lower than that of a standard set of tyres. This arrangement, combined with remote rear tyre inflation, constitutes a genuine advantage in terms of soil protection. This technological breakthrough in the tracked vehicle field was achieved simply by adapting the hydraulic systems already fitted to the set of suspended crawlers. Depending on the turning circle, the hydraulic pressure on the crawler support rollers automatically increases. Only the support rollers and the rear drive roller remain in contact with the ground, reducing the contact area by about a third. The crawler unit increases the length of the JAGUAR 960 TT by about a metre, and this new extended wheelbase delivers a genuine upside in terms of maintenance, in particular by offering easy access to the corncracker and the accelerator. As this consequently removes the obstacle to fitting forage harvesters with crawler tracks, the solution provides a satisfactory solution to the regulatory issue of axel load. The 13-tonne limit, recently increased to 14 tonnes in response to pressure from manufacturers, is easily exceeded by harvesting equipment when it carries its own folding front attachments. On the road, the vehicle can travel at 40 km/h (subject to law) with an external width of 3 metres.

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LAFORGE (FRANCE)

Implement guidance interface

Commercial name: **DynaTrac®**

Precision farming can help to reduce inputs and improve the profitability of farms. In this respect, agricultural machines (strip till, seeding, weeding, fertilisation) benefit from being fitted with guidance systems to maintain their A-B line. These accessories also come with additional chassis parts bearing a side alignment system. While the trailing implement is locked in place by the lower stabiliser arms, large coulter discs are attached to the current interfaces to prevent the tractor from neutralising the sideways corrections through the behaviour of its tyres. The dynamics of these existing movements create mechanical constraints which generate friction, and therefore additional consumption, and even damage to implements. This situation is even more acute on sloping and irregular land. This is what led LAFORGE, a specialist in tractor-attachment coupling and the regulation of front and back implements, to design and produce a versatile guidance interface. The implement/interface and tractor together are free and trajectory correction happens along the pulling line. This is defined by the lower arms converging intersection as viewed from above. The modification of this geometry corrects deviations without creating any other restrictions. This is the main characteristic of this innovation. The interface slides sideways according to the steering performed by the GPS guidance system or the video camera in order to guarantee the positioning of the trailed implement to an accuracy close to one centimetre. The DynaTrac®, which can be used with all tractors and all implements on the market, provides a guidance function to a standard - and therefore cheaper - implement, instead of adding this function to each implement individually. Moreover, the user only needs to learn how to use one type of guidance interface instead of having to understand and configure several different ones.

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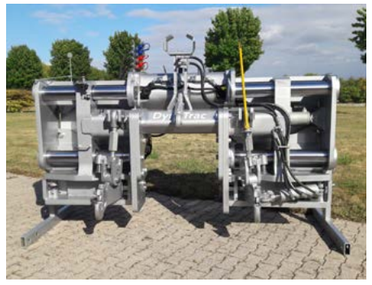

AIRBUS DEFENCE AND SPACE & JOHN DEERE (FRANCE)

Live monitoring of N-balance based on satellite imagery and machinery data

Commercial name: **Live NBalance**

Live NBalance is a unique combination of innovation by John Deere and Airbus to offer the first regular and mapped monitoring tool for nitrogen efficiency use throughout the crop cycle. It supplies a dynamic dashboard giving the farmer all the necessary information to analyse their field and make educated decisions on the actions to take, in real time. Live NBalance puts the farmer and their technician back at the centre of the decision process. The tool delivers all the data, whatever their source, to the same place: upstream information (hydrogen application actions) and downstream information (impact of fertilisation on crop development). The farmer can view the extent of potential deviations in the field, establish their possible causes and determine corrective action. After harvest, they can compare "the film" of the season with the result to adjust next year's fertilisation strategy. The system combines infield data acquired from: embedded sensors measuring nitrogen content (mineral and organic), yield and protein content at harvest; AND satellite sensors measuring nitrogen absorbed throughout the season thanks to images regularly provided by the combination of several Sentinel2, Landsat8, SPOT6 and SPOT7 constellations. Nitrogen use efficiency becomes a performance indicator. This solution is an illustration of "measured agriculture" with exhaustive monitoring of time and space. The final N-balance map facilitates the calculation of return on investment with regard to nitrogen.

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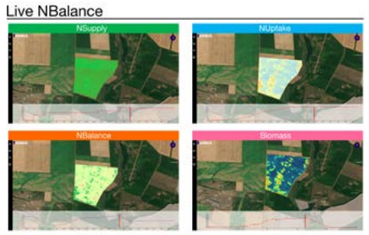

BOSCH FRANCE (FRANCE)

Live monitoring of vegetation using in-field connected sensors for crop management assistance

Commercial name: **Field Sensor (by Bosch)**

Bosch Field Sensor is a set of connected sensors which collect information on the crop, soil and the climate on a daily basis. The sensors are all contained within a spiked stake, notably containing a multispectral camera which takes daily pictures of crop development. From these information sources, several agronomic variables are calculated (leaf area, vegetation index, chlorophyll content, humidity, temperature, soil water potential, PAR radiation). Results are converted into applicable insight through the use of the economic algorithms from the company Hiphen combined with economic models. The results obtained offer the farmer real-time monitoring on their smart phone, with an array of daily tips to enable them to manage their fields optimally in terms of outcomes. This connected sensor package is an "all-in-one system" capable of monitoring the phenological characteristics of the crop in combination with soil and climate parameters, in order to improve the pertinence of advice supplied to the user. This system helps to follow the growth profile of the crop, based on photos (one per day) with suitable algorithms which can detect the arrival of new vegetation stages, leaf damage and, thanks to multispectral sensors, calibrate satellite data (vegetation indexes for nitrogen needs). Finally, this system enables spatial data to be merged (satellites, drones and embedded systems) to give a picture of the heterogeneity of the field and/or predict the quality and quantity of the harvest.

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JOHN DEERE (FRANCE)

Proactive and collaborative support for farm machinery

Commercial name:
John Deere Support Connecté

John Deere Connected Support adds a collaborative aspect to telematics-connected systems. Information is more quickly accessible at a central location, but more importantly it is automatically interpreted by permanent comparison with other connected equipment, and also with the technical support database continually enhanced by John Deere dealers and technical services. All individual machines contribute to enhancing a collective database, which is thus capable of detecting a breakdown before the appearance of classical symptoms: this is called the Expert Alert. Finally, a central tool (Machine Dashboard) enables each dealership to monitor all its connected equipment and to become proactive. Based on the Expert Alert detection of simple error codes and the status of periodic maintenance, a permanent classification of the machine fleet is determined at dealership level to plan the operations of technicians. In dealerships, work planning helps to smooth the workload and minimise unexpected breakdowns. This improves the responsiveness of technical teams whilst reducing peaks of activity in workshops. For customers, technical operations can be planned without interrupting their work. In the event of a critical Expert Alert (the detection of a high-risk of failure in the short term), preventive repairs initiated by the system are covered by the legal warranty or the warranty extension taken out by the user in the same manner as an observed failure.

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KUHN (FRANCE)

Virtual assistant for routine machine maintenance and adjustments

Commercial name: **REDVISTA**

The KUHN REDVISTA mobile app uses augmented reality technology to help the machine user or the distribution network technician in routine maintenance and adjustment tasks. This application can be used on all types of smartphone or tablet once it has been downloaded. It gives the user access to real-time and updated information on their machine, without using printed instructions and without any risk of losing these documents. This first immersive augmented reality application aimed at the user and the distribution network helps to locate all lubrication points, even those hidden after a long working day, without having to visit the washing station first. This application enables this type of maintenance task to be delegated to people without technical training. By simply scanning a sticker on the machine, all the information relating to the machine is immediately available, at all times and anywhere in the world, even without an Internet connection. The KUHN REDVISTA application helps to guarantee exhaustive and regular maintenance of machines so as to optimise the functioning and lifespan of the machine and its components. This application adds an entertaining aspect to important tasks such as maintenance and adjustments. It represents a new form of adjustment advice which is suited to and appropriate for younger generations who have a culture which is more digital and less technical in nature.

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SODIJANTES INDUSTRIE (FRANCE)

Wheel with an integrated air tank

Commercial name: **Tank Air Wheel**

The volume of air in an agricultural vehicle tyre is quite substantial. Central tyre inflation, which is necessary to adjust air pressure according to conditions of use, often takes too long due to the volume of air to be supplied and poor compressor air supply rate. By integrating a tank maintained at 6 bars in a large volume fitted into the wheel rim, the Tank Air Wheel (TAW) technology by Sodijantes substantially improves the performances of tyre inflation systems. Sodijantes Industrie answers the problem in a simple and intelligent way, independently of the tyre. The incorporation of a tank into the rim effectively creates a buffer stock to inflate tyres of all brands to the desired pressure without stopping and almost instantaneously. This significantly reduces tyre inflation time to reach the right pressure as quickly as possible. By thus contributing to making immediate central tyre inflation more widespread by reducing inflation time by a factor of 10, Sodijantes Industrie contributes to soil protection, fuel savings and the reduction of on-the-road tyre wear. The system enables farmers and contractors to quickly adjust the tyre pressure on their machines, going from lower pressure for fieldwork to higher pressure during transportation and vice versa, thereby achieving fuel savings.

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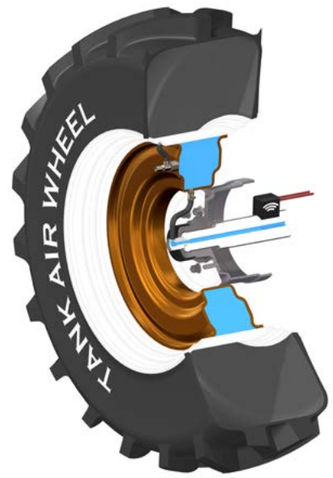

BRONZE MEDALS

SIMA INNOVATION AWARDS 2019 BRONZE

AMAZONE (FRANCE)

System for monitoring and compensation of effect of wind on spread fan

Commercial name: **WindControl**

With the WindControl system installed on Amazone centrifugal mineral fertiliser spreaders, application is even in all areas of the field, whether the wind is weak or strong and whatever its direction. A wind characteristic sensor, installed on a foldaway mast on Amazone fertiliser spreaders, transmits data to the computer processing unit which will can manage spreading settings accordingly. This means that the optimal basic settings of the spreader, determined at the beginning of the application according to the fertiliser to be spread and the intended width of coverage, are continuously adjusted to compensate for the drift caused by local wind effects. The dropping points of the fertiliser on the left and right discs are independently adjusted so as to influence the fertiliser trajectory accordingly, while the rotation speeds of the two discs are also modified to adjust the projection distance impacted by the wind. The system works by compensation entirely automatically and also supplies the user with a continuous indication of wind speed through the Isobus spreader management terminal. A colour code display advises users to stop spreading if conditions become too windy and are impossible to compensate dynamically. The WindControl system thus helps to secure fertilisation operations by maximising the number of working timeslots possible in the field whilst minimising the risk of poor application which can prove detrimental to crop yield and quality. Its optimal functioning is guaranteed by the Argus Twin system, which continuously verifies the correct direction taken by the fertiliser when leaving the discs. The characteristics of the fertiliser are taken into consideration by the calculator in order to personalise the settings of the spreader.

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ARBOS FRANCE (FRANCE)

Trailed boom sprayer with independent wheel suspension system, adjustable wheel track and articulated chassis

Commercial name: **Arbos Blaster**

The Arbos BLASTER boom sprayer uses an articulated chassis where the rotation pin, instead of being placed on the drawbar as on most trailed sprayers on the market, is placed near the rear axle, which itself is close to the boom. Two steering sensors located on the towing eye and on the rotation centre of the axle help to directly steer the axle by means of two hydraulic actuators. Thanks to the "power" steering of this axle and the hydraulic adjustment of track width to that of the tractor, the wheels of the sprayer can strictly follow those of the tractor, during changes in direction and headland turnaround. Thanks to the steering angle of the sprayer axle (28°), the turning radius is smaller than 4 m. Attaching the boom to the axle and not the rest of the sprayer provides a triple advantage: better control of the boom which is always parallel to the axle of the wheels of the sprayer; spraying along full width to the very end of the field by delaying the U-turn of the boom compared to that of the tractor; minimisation of accelerations and decelerations respectively on the outside and inside of the turning curve shortly before and after U-turns. The forward speed of nozzles and the quantity of product distributed are kept constant along the whole working width. Thanks to the independent suspension of each wheel and to the option of setting nozzle openings every 25 or 50 cm, work can also be conducted with nozzles closer to the ground. With these different combined technological solutions offered by the BLASTER trailed boom sprayer, Arbos delivers a blend of productivity and efficiency, crop protection, regular spraying and drift reduction.w

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BEISER ENVIRONNEMENT (FRANCE)

Fodder rack with galvanized trough, trailer mounted rain protection with connected weighing

Commercial name: **Fourrage lib**

The fodder transportation and supply trailer Fourrage Lib is placed by the livestock breeder on remote fields. A patented remote weight sensor is connected to a LoRa or SigFox phone application. Using this connected sensor, the breeder is informed at all times of the remaining stock of feed, and can set alert thresholds to organise distribution. A first alert may be triggered when 50% of the quality of fodder is consumed by the herd, and a more active alert at 70%. It is therefore possible to know at what times the animals feed, and check in real-time if everything is going satisfactorily on the land, without having to make a trip out there. The device measures the quantity of fodder consumed every day. The geographic positioning of the equipment is also an asset against theft. This trailer is certified for road transportation and its fodder racks and troughs are galvanised.

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BERTHOUD (FRANCE)

Long-term leasing solution

Commercial name: **BERTHOUD RENT**

The Berthoud Rent service is a long-term leasing solution which also includes a service to monitor, check and maintain the sprayer on the user's premises so that this user is always in possession of a well-maintained, well-adjusted machine working to the best of its efficiency. It is an "all-inclusive" solution from delivery to return of the machine, including the regular servicing of the sprayer. This service guarantees the end-user a single contact person with whom to arrange and implement the rental contract: from drawing up the rental contract to the return of the sprayer. The originality of the Berthoud Rent service lies in the possibility of including the cost of wear parts (including nozzles) in the contract and two annual visits (conducted by the dealer and a Berthoud technician) to check up on the condition of the machine and carry out its servicing and maintenance in order to guarantee the best operation of the sprayer. This comes at no extra cost to the operator. It is also possible to adjust and modulate rental payments according to the actual activity of the machine. This Berthoud Rent service therefore offers genuine flexibility in terms of the use and financing of sprayers.

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BERTHOUD RENT

CASE IH (FRANCE)

Connected electrical weed killer

Commercial name: **Case IH XPower**

The WeedControl system from Case IH is an alternative to the use of chemical herbicides. This system uses high-frequency and high-voltage electricity to eliminate undesirable plants from leaves to routes. This system is applicable both for row crops and standard field use. The weed effect can be noticed 30 minutes after application and seeding may be carried out immediately after the passage of WeedControl. The full system comprises an electrical accessory on the tractor, and a weather station and a soil moisture sensor. Thanks to accurate data which takes into account variations between fields, the system can be optimised by supplying the right voltage in each location. The global solution is connected to the telematics portal through an API for weather and soil humidity data. The WeedControl system is compatible with the Isobus standard Class 3 to control the speed of the tractor according to the specific needs of each part of the field. This digital herbicide system has an immediate effect on the weeds to be destroyed and can be connected with direct seed drills. It is an environmentally friendly system which is just as effective as chemical products.

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CLAAS (FRANCE)

Flex Draper

Commercial name: **CLAAS CONVIO FLEX**

The generally-observed wheat-barley-rapeseed crop rotation is tending to evolve for a range of reasons towards more complex operations involving many different crops. The trend in short selling channels and local appellations (e.g. lentils from the French "Berry" region), the development of organic farming and soybean crop surface areas are modifying crop practices in response to consumer demand. Some farmers can harvest up to 18 varieties in a season and this development required the design of a new, highly versatile draper header, capable of efficiently collecting the lowest and most varied types of crop harvests: rapeseed, soybean, cereals, fava beans, sunflowers, peas, lentils, etc. The new CONVIO FLEX header combines all the necessary criteria, adopting the main acknowledged principles of header harvesting and flexibility, already in evidence in North America, in a new sophisticated product. For the first time, the conveyor belt moves at the same speed as forward speed, AUTOCONTOUR FLEX automatically adjusts the conveyor in addition to its own cutterbar setting range of 225 mm. Communication between the header and the machine enables all the main settings to be done from the CEBIS in the cab. It offers three operating methods: flexible with adjustable pressure, laid crops and rigid. The side belt angle is the flattest on the market so as to reduce losses of small grains. Finally thanks to the FLIPOVER concept offered as standard on the front reel, and the shape of the plastic tines, material balling is prevented, even in the dirtiest fields. The reels also are fitted with a hydraulic safety device which automatically lifts them up in the event of a collision with the ground.

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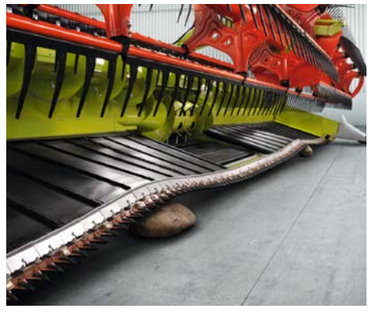

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CLAAS (FRANCE)

Wheel loader

Commercial name: **Torion Sinus**

The SINUS design combines two steering modes frequently used on wheel loaders. These are:

- central articulated joint, which offers the advantage of operating with an attachment always in line with the front axle, but whose main drawback is the stability when steered to a maximum angle.
- four-wheel-drive, with the drawbacks of not operating with the attachment (buckets, fork) always in line with the front axle, and having a wide turning radius of the front attachment.

The choice of an articulation angle limited to 30% and a steered rear axle eradicates the drawbacks of both systems whilst maintaining their respective advantages. By preventing the reduction of the overhang, the risk of accident is controlled. The manoeuvrability is compensated by the steered rear axle. Front and back axles are mechanically synchronised using steering rods and levers driven by the articulated joint. Simple and reliable, it provides a response to farming safety concerns, by preventing errors in the choice of steering mode. The system offered by CLAAS exists on the loaders of its partner Liebherr, but the technical cooperation conducted in parallel to commercial agreements in 2015 has helped to meet the farming specifications requested by CLAAS, in particular the oscillation damping system in the central SINUS articulated joint.

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CLIMATEFIELDVIEW (SWITZERLAND)

Digital ag platform that gives data-driven insights to maximize return

Commercial name: **Climate FieldView™**

Climate FieldView™ is a comprehensive digital agriculture platform designed to help farmers analyse the masses of data that they acquire from different sources, and in particular machine data which may be collected thanks to Climate FieldView Drive™. This wireless device can be plugged into the OBD of tractors and can acquire the data from the CAN networks of the tractor and attachments (Isobus in particular). This machine working data can then be analysed and cross-referenced with other information (soil maps, remote detection images) to help farmers access advanced agronomic information to manage field variability and optimise productivity. This platform combines powerful agronomic analysis tools and a highly simplified and intuitive interface allowing the user to devote their time to farming analysis without requiring proficiency in complex computing solutions.

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DE SANGOSSE & **CAP 2020** (FRANCE)

Self-powered connected sensor for counting and monitoring of slugs

Commercial name: **LIMACAPT**

LIMACAPT is a standalone sensor that can automatically count slugs in fields. Images are acquired during the night during slug activity, using a camera and infrared lighting. The nanocomputer embedded into the device then runs an algorithm which processes several hundred images taken each night. The user receives not these images, but rather the results of this data analysis (the final pest count at the end of the night), sent by means of a low speed or GSM chip. This solution offers the chance to choose the best network option suited to French rural regions. The whole electronic system, which is self-powered due to its battery and solar panel, is assembled on a fixed device, making it easy to deploy in the fields to be monitored. The innovation of LIMACAPT mainly lies in its continuous image capture detecting all active individuals, and on an embedded image processing algorithm. This system works with a low error rate (approximately 5%) without any need for user intervention, and enables the recognition and identification in the fields of objects appearing and disappearing from the frame without counting the same slug several times. LIMACAPT is a genuine tool in precision farming which detects the present slug populations early and daily, to enable farmers to effectively deal with this pest as soon as the risk becomes apparent, for reasoned interventions. LIMACAPT opens up new scientific perspectives in terms of modelling for better insight into the pest, and more widely of biodiversity observed on farming land.

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HYDROKIT (FRANCE)

Upper linkage and cardan shaft hitch assistance

Commercial name:
Kit 3e main pour 3e point

Hitching and unhitching attachments behind tractors, in particular handling the hydraulic push bar and transmission shaft, require strenuous effort and are a regular cause of musculoskeletal disorder, injuries and crushing accidents. The “third hand for top link kit” proposed by HYDROKIT is an easy way of hitching and unhitching devices using the hydraulic top link, but also cardan shafts, thanks to an electric winch system operated by two switches at the back of the tractor. The kit reduces required effort and helps to manoeuvre the top link and the driveshaft during hitching and unhitching operations. The system improves working conditions of farmers by making these operations easier and by reducing:

- risk of crushing and injuries relating to insufficient support and the top link or driveshaft falling;
- musculoskeletal disorders caused notably by inconvenient positions adopted by the user during these operations.

The hitching and unhitching of the top link no longer require the strength of the user. They simply attach the snap hook of the “third hand kit” on the attachment of the top link supplied in the kit and lift or lower it using two buttons located nearby. Then they simply hitch or unhitch the implement and remove the snap hook. The top link bar remains in a high position and no longer interferes with the movement thanks to a handy spring system. For driveshafts, the principle is the same. The user wraps the rope with the snap hook around the cardan protection and activates the lifting or lowering movement until they are lined up.

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ISAGRI (FRANCE)

Voice assistant for farmers

Commercial name:
Fernand l’assistant

The aim of Fernand is to make the farmer’s job easier by answering all the simple questions he may have. The user asks Fernand, his voice assistant, a question on his smartphone or connected speaker. Once our artificial intelligence algorithms have analysed the question, the Fernand application searches for the information required to answer it in the dedicated databases, then supplies the answer to the farm. Fernand synchronises itself with the farm management software to recover the information necessary for its operation and store it in a dedicated database hosted in the cloud. One advantage of this is that any farming solution or service can pair with this database through APIs and therefore transfer its information. Fernand aims to be universal and open, so as to enable the farmer to select their favourite services. Thanks to Fernand’s cognitive services, the user’s questions are analysed and deciphered in understandable terms by artificial intelligence, and Fernand’s answer is then supplied. The result is given in vocal form by Fernand. Depending on the context, a visual feedback may also be offered to enable the farmer to understand and analyse the elements making up the answer. Using Fernand thus helps to save time but also ensure that decisions planned every day comply with various regulations (product dosing, operation timing, weather conditions, etc.).

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JOURDAIN SAS (FRANCE)

Automatic two-way gate locking device

Commercial name:
Wide gate with Surlock

In animal husbandry, gates are opened and closed several times a day, and cattle breeders are looking for a simple and safe way to work with animals every day. This is what led Jourdain to create the Surlock locking system. This mechanism is made up of a spring-loaded bolt which is stopped by a sliding blocking peg, held by D-shaped housing, as the gate swings shut. This principle makes the bolt click home into in a metal recess. The Surlock bolt blocking mechanism works in both opening directions and can be fitted to all gates. A simple push guarantees fast and safe gate closure.

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KARNOTT (FRANCE)

The connected meter that simplifies the monitoring of your tasks

Commercial name: **Karnott**

With its connected meter, the Karnott solution enables the collection of agricultural machinery or equipment activity data (geospatial positions and movements of equipment). Entirely self-sufficient in terms of power, the meter can be fitted to any type of equipment (compatible with all brands, all ages and all types of attachments and even on transport containers). Equipped with a GPS receiver and a communication module, it transmits its data to a server. The algorithms developed exclusively by Karnott offer detailed behavioural analysis of different equipment categories. This leads to a breakdown of different working times (periods of machine activity, intermediate periods - unloading and/or reloading of the equipment - journey and rest times), together with a calculation of surface areas worked on. The Karnott solution is cost-effective. It helps to streamline administrative tasks and invoice work to the nearest hectare. The solution fulfils the needs of farming sector stakeholders in the pooling of machinery, the automation of work slips, the verification of demonstration equipment user protocols and to accurately share out the equipment by legal entity, gain precise knowledge on time spent on each crop to calculate margins, etc. With its solution, Karnott leverages algorithm science for the benefit of new, efficient and collaborative farming practices.

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KVERNELAND GROUP FRANCE SAS (FRANCE)

Microgranule distributor

Commercial name: **Kverneland microgranule distributor**

Microgranule distributors are fitted to more than 70% of precision drills on the market (Pestexpo report by GRECAN – 2005). In field crop cultivation, 78% of the exposure happens during preparation. Additionally, exposure chiefly happens when changing the microgranule metering wheel. With its trapdoor sealing it off from the seeding element, there is no longer any need to empty the distributor hopper to change metering wheels. The wheel mount screw makes for a quick changeover of the metering wheel and prevents the operator from touching the product with their hands in the seeding element. With its full emptying system, the microgranule deposits in the hopper and the pollution of water, air or soil due to these deposits during cleaning are limited. Added to which, this microgranule distributor works on electric drive, which is compatible with the functionalities of precision drilling combined with GPS so as to modulate doses and avoid overlaps between the distributor and the seeding element in each row.

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MANITOU GROUP (FRANCE)

Time-controlled and adjustable engine cut-off on telehandlers

Commercial name: **Eco Stop**

The principle is simple: the engine shuts off automatically when it is idling and without a driver in the cab. This function can be set to between 1 and 30 minutes and has been designed to work on all farming applications, always placing a priority on user productivity. Eco Stop can be activated and deactivated very simply at the push of a Double Switch Button (DSB) located close at hand in the cab. This function has a significant impact on the three major components making up the total cost of ownership (TCO): machine depreciation, fuel consumption and preventive maintenance (up to 82% of TCO). Arnaud Sochas, product manager for the agricultural range, adds: “Through the data collection made possible by connected machines, we estimate that engines run for between 15 and 30% of the time without a driver in the cab. On the basis of 15%, for a machine used 1,000 hours per year for three years, the Eco Stop function generates savings of €4,500.” Available on nearly all the machines in the MLT agricultural range, this option can also be retrofitted to MLT models already produced since September 2018.

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MANITOU GROUP (FRANCE)

Re-use of telehandlers at end of useful life

Commercial name:
Re-use of MANITOU telehandlers at end of useful life

In this approach, Manitou Group aims to view the end of life of equipment no longer as a (future) constraint but as a an entirely separate mission of the manufacturer - and even as an opportunity. This entails a very detailed study process, ranging from the analysis of dismantling cycles and their optimisation to the development of remanufactured and used parts. In this award, we pay tribute to the commitment of Manitou Group to material recycling, capturing value through recycling, in particular metals and - and this is the crux of the issue - reusing parts. Due to the way product life cycles are analysed nowadays, manufacturers are prompted to incorporate the user costs of equipment at the end of their life into the total cost of ownership (TCO) and consequently improve the design of new machines in this end-of-life objective. This initiative also opens up the way to a longer availability of technical parts through the reuse of decommissioned equipment.

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NEW HOLLAND AGRICULTURE (ITALY)

DFR Reverser

Commercial name: **DFR Reverser**

New Holland’s system to reverse the rotation direction of the Dynamic Feed Roll (DFR) is the heart of the innovation of the blockage clearance system. It is made up of a hydraulic actuator, a ratchet system and a toothed crown on the DFR shaft. A smart unclogging procedure is programmed in the Intelliview cabin screen. If the DFR drum speed drops below 100 rpm, this means that it is starting to block and the rotors and conveyor will disengage automatically. The operator then simply starts the procedure without leaving the driver’s seat. This happens in three steps:

- reversal of rotation direction of the conveyor to discharge the product along the length of the conveyor;
- reversal of the rotation direction of the dynamic feed roller (DFR) with the hydraulic actuator and the ratchet system until the pressure measured by a sensor on the actuator is close to zero (meaning that the DFR is now unblocked);
- a new reversal of the rotation of the conveyor in the opposite direction to permanently discharge the product that has caused the blockage.

Following this procedure, the operator can reengage the rotors and conveyor and start work again without having to climb down and undertake manual and hazardous operations to unblock the machine. The whole procedure associated with the system thus delivers safety improvements, but also a faster work rate by reducing the time wasted to unblock the machine from several hours to around ten minutes.

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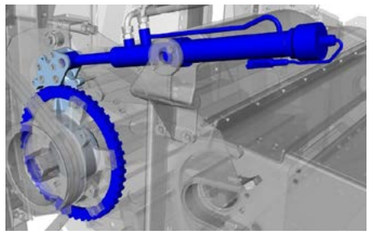

RABAUD (FRANCE)

Remote-controlled chicken rearing shed washer

Commercial name: **LAVICOLE**

Mounted on a crawler track unit, this self powered remote-controlled washer designed to clean livestock rearing sheds, has four washing functions:
• a steerable boom, mounted on an articulated arm which can reach up to 4.5 m high, fitted with five rotating nozzles for the washing of the ceiling and walls and also cleaning shutters, the floor, etc.;
• a tunnel for cleaning of lifelines and troughs;
• a manual high-pressure gun for finishing;
• a foam gun to apply the detergent.
The LAVICOLE washer is fitted with a 22 bhp HONDA petrol driven motor with hydrostatic forward drive. The machine is connected by a 100-m hose to a high-pressure cleaner unit located outside. This has a 1000-litre buffer tank and a 140-bar pump offering a 87 l/m flow rate. The drive is provided by a tractor PTO or by a diesel engine. A 1,000-m² chicken shed requires approximately three hours of cleaning. Substantial water savings are made compared with a manual pressure cleaner. Washing a livestock shed and its equipment is a painstaking task, but it is essential for health and safety reasons. Some breeders acquire equipment and organise themselves to save time and improve working conditions, whilst others call on service providers. The latter experience difficulties in recruiting staff to carry out this task. The tough working conditions are mainly related to holding the pressure cleaner, water and dirt splashes, and moving the equipment (pump and hoses, electrical cable, water supply pipe). Moreover, if the washing is done with cold water, the operator works in harsh conditions in the winter. The LAVICOLE solves all these problems. The remote control makes the machine easier and more convenient to use.

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BRONZE MEDALS

SIMA INNOVATION AWARDS 2019 BRONZE

TRIMBLE (GERMANY)

Auto Asset Selection with use of Bluetooth Tags

Commercial name: **A-100 Asset Tag and Auto Asset Selection App**

A-100 Asset Tag is a low-cost Bluetooth Low Energy (BLE) tag with a lifespan up to 5 years depending on the broadcast signal strength and the frequency chosen by the operator (it is fitted with a replaceable battery for extended life of the tag). These tags can be used to identify an implement, a driver or a tractor or machine in the event where the ag system is shared between several machines. Tags can be mounted in a number of locations on the implements, but a movable point on the lifting cylinder mechanics is required if implemented work state detection is required. For vehicle detection, tags are located inside the operator cab. Operator detection is easily accomplished by attaching a tag to the operator identification card, keychain, etc. When a specific tag is present, the Precision-IQ software will automatically change settings accordingly. If the operator disconnects an implement with a 3 m width and then connects an implement with a 5 m width, the display will automatically change the implement setup. If operator A leaves the cabin and operator B takes over, Precision-IQ will communicate the correct information to the record-keeping software, so all work is tracked to the correct operator. The system can be used with implements to auto configure the precision agriculture system whenever the operator changes implements. The system will automatically detect the attached implement and adjust the width and control parameters of the guidance system. The system can also track the last-known location of the implement and assign utilisation hours to the attached implement for maintenance and record-keeping.

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TRIMBLE (GERMANY)

Automatic data sharing across the farm

Commercial name: **AutoSync**

The AutoSync solution enables the sharing of data with no user pain. Up to now it had been possible to collect, manage and delete data on the management computer at the farm, but all this data had to be collected first by the tractor display then transferred to the office using a physical media (thumb drive, etc), or by sending it to a server or to the Cloud. With AutoSync, the farm manager can delete or add data on each of the displays of his fleet, automatically and virtually in real-time while the machines are at work in the fields. And he continuously recovers the work data of his machines. The data transmitted includes field data (edges, guidance lines, specific points and zones, surface area worked upon and application maps), but also the different products, vehicles, implements and users. This solution automatically updates the data on the tractor display in real-time from the farm management computer and vice versa. It also enables data to be shared between tractor displays. The data transmitted includes field data, the different products, vehicles, implements and users. The farm managers can specifically select which data they wish to send - or not to send – to operators. The drivers, meanwhile, can concentrate on their working environment and ensure that everything is running smoothly while the farm manager ensures that the right data arrive in the right place at the right time.

Contact :
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PANEL COMPOSITION 2019

26 members from different sectors (agricultural machinery, breeding, AgTech, agronomy, engineering, automotive industry, aeronautics, etc.), research and education specialists, as well as repeat users of equipment. To examine the entries, the judges can also call on the expertise of more than 300 European specialists!

CHAIRMAN OF THE PANEL

Jean-Marc BOURNIGAL
Managing Director of AGPB (General Association for Wheat and Cereals Producers)

SIMA'S 3 TECHNOLOGY ADVISERS, PANEL SPOKESPEOPLE

Gilbert GRENIER
Bordeaux Science Agro.
Professor of Automation and Equipment Engineering.
SediMaster 2015.
Author of « *Agriculture de précision. Les nouvelles technologies au service d'une agriculture écologiquement intensive* »

Frédéric VIGIER
IRSTEA - General Board.
Technological Expert on Agricultural Equipment and E-Agriculture

René AUTELLET
Independent consultant

PANEL MEMBERS

Sami AIT-AMAR, *ACTA*
Agro-environmental project manager

Thierry BAILLIET,
Thierry The Modern Farmer
Hauts de France FRCUMA President / Farmer / YouTube influencer

Guillaume BOCQUET, *AXEMA Engineering consultant*
Technical division manager

Christian BRIAND, *Bpifrance*
Food-processing and agriculture sector manager

Eugenio CAVALLO, *IMAMOTER (Istituto Per Le Macchine Agricole E Movimento Terra)*
CNR (Consiglio Nazionale Delle Ricerche) - Italy
Research Director

Stéphane CHAPUIS, *FNCUMA*
Agroequipment department manager

Pierre CLAVEL, *French Ministry of Agriculture and Food*
Occupational Health and Safety Inspector

Jean-Paul DAOUZE,
Marne Chamber of Agriculture
Consulting engineer

Etienne DISERENS,
Independent consultant - Switzerland

Laure FIGEUREU-BIDAUD, *NUFFIELD*
Farmer - Nuffield France laureate and member

Christelle GEE, *AgroSup Dijon*
Director of the Agronomy, Agroequipment, Breeding and Environment Department (2A2E).
Researcher and professor

Daniël GOENSE, *Wageningen UR Livestock Research* - The Netherlands
Senior Project Manager

Philippe GOUVAERT, *CETIM*
Deputy Director of Innovation & Research Development

Jean-Marc HELLER, *IRT St-Exupéry*
Business Development & Communication Director

Christian HUYGHE, *INRA*
Scientific Director Agriculture

Arnaud JARY, *MFR De La Pignerie*
Instructor and Monitor of BTS GDEA, CS & CQP AXEMA

Florentino JUSTE, *IVIA (Valencian Institute of Agricultural Research) Spain*, Director

Olivier MISERQUE, *Wallonia Public Service - Agriculture Department* - Belgium
Scientific Officer

Anaïs ORBAN, *FNEDT*
Manager of agricultural, environmental and sustainability projects

Jean-Luc PÉRÈS, *PCMA*
Agricultural Machinery Advisor Expert

Emmanuel PIRON, *IRSTEA, Clermont-Ferrand Center*
Manager of the "Spreading" Technological Research Unit

Ariane VOYATZAKIS, *Bpifrance*
Manager of the Food-processing and agriculture department

SIMA WORLD

THE AGRICULTURAL EQUIPMENT MARKET

IN THE WORLD

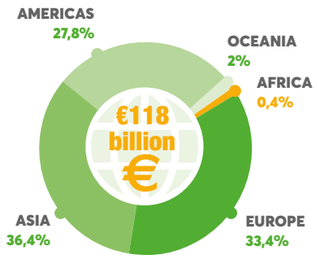
▶ KEY MESSAGE FROM FRÉDÉRIC MARTIN, AXEMA PRESIDENT

«In 2018, manufacturers are generally part of a very positive trend. They have confidence in the economic recovery and are doing everything they can to invest in the future: not only in terms of manpower to strengthen their production systems, but also in terms of innovation to meet growing demand from society and farmers.»

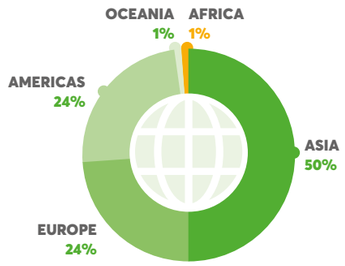
NOTE

From mid-2014 to late 2016, the business climate for Agricultural Equipment deteriorated (negative balance of opinions), indicating a slowdown in global sales. In early 2017, the index became positive again and even increased towards the year end thanks to a recovery on the mature markets (United States and Europe) and a return to growth in emerging countries (China and India, but not Brazil).

GLOBAL PRODUCTION OF AGRICULTURAL EQUIPMENT IN 2017

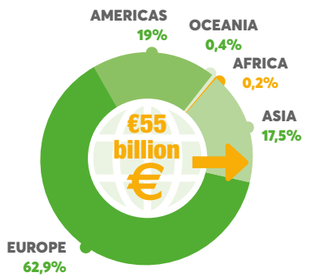


INVESTMENTS IN AGRICULTURAL EQUIPMENT BY REGION IN 2015

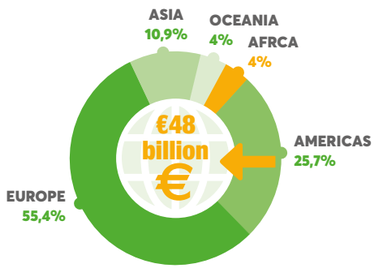


GLOBAL TRADE IN AGRICULTURAL EQUIPMENT IN 2017

Exports



Imports



THE CHALLENGES FACING GLOBAL AGRICULTURE

8,1 billion
the estimated global population in **2025**

INCREASE IN GLOBAL PRODUCTION BY 2015 (COMPARED WITH 2015) :

- Beef and veal **+ 15,4%**
- Milk **+ 17,4%**
- Wheat **+ 11,3%**

ROBOTICS

IS EXPECTED TO REACH 58% OF GLOBAL INVESTMENTS BY 2035

DISTRIBUTION OF ROBOT SALES BY AGRICULTURAL EQUIPMENT CATEGORY IN 2035

- Autonomous tractors: **42%**
- Dairy management: **20 %**
- Tilling, sowing and planting: **20%**
- Fertilisation work, crop and forest protection: **11%**
- Equipment management: **3%**
- Agricultural drones: **3%**
- Livestock management: **1%**

IN EUROPE

In Europe, the agribusiness sector (manufacturing and trade) comprises more than 30 000 companies and 350 000 employees.

8 countries account for more than **77%** of sales on the EU agricultural equipment market: Germany, France, Italy, United Kingdom, Spain, Poland, Austria and Belgium.

AGRICULTURAL EQUIPMENT PRICE INDICES

- Agricultural tractors: **+ 3,2%**
- Other harvesting equipment: **+ 1,9%**
- Landscaping equipment: **+ 1,2%**
- Sowing, planting and fertilisation equipment: **+1,1%**
- Tilling equipment: **+ 1,1%**
- Field crop harvesting equipment: **+ 0,9%**
- Irrigation and crop protection equipment: **+ 0,6%**
- Haymaking equipment: **- 0,2%**
- Dairying equipment: **- 0,7%**
- Transport and handling equipment: **- 2,3%**
- Viticultural equipment: **- 10,7%**
- Livestock breeding equipment: **- 20%**

EUROPEAN AGRICULTURAL EQUIPMENT MARKETS IN 2016

TOP 5

1. Germany
2. France
3. Italy
4. United Kingdom
5. Spain

€31,4 billion
total European exports of agricultural (- 0,6% vs 2016).

EUROPEAN PRODUCTION OF AGRICULTURAL MACHINERY IN 2017

€40 billion
(+ 5,4% compared with 2016)

Exports and imports to and from the **Baltic countries** have risen significantly since **2016.**

IN FRANCE

▶ KEY MESSAGE FROM FRÉDÉRIC MARTIN, AXEMA PRESIDENT

«A positive economic situation that correlates partly with the improvement in farms' financial situation over the last two years, despite a fall in agricultural yields.»

NOTE

At a time when there is talk of an upturn in agricultural equipment sales, the rising cost of steel (+9% in a year) could put a brake on the economic recovery (by driving up the prices of the machinery produced).
Prices of agricultural equipment rose by +2.4% in a year.
Due to the introduction of new engine standards, tractor prices showed the biggest increase (+4.2%). Next were trailers (+2.3%), which were more strongly impacted by the recent increase in steel prices (+9%).

ROBOTS BY AGRO-EQUIPMENT CATEGORY IN FRANCE

IN US$ MILLIONS BY 2035

- Agricultural equipment market: **8,300**
- Total robots market: **4 125**
  - Autonomous tractors: **1 700**
  - Dairy management: **840**
  - Tilling, sowing and planting: **840**
  - Fertilisation work, crop and forest protection: **460**
  - Equipment management: **140**
  - Agricultural drones: **115**
  - Livestock management: **30**

FRENCH AGRICULTURAL EQUIPMENT MARKET IN 2018 (OUTLOOK)

€5,3 billion
(+ 4,79% compared with 2017), or **4% of global production**

Tractors account for **31%** of French production.

REGISTRATIONS OF MAIN TYPES OF AGRICULTURAL EQUIPMENT	2017	% 2017/2016
Standard tractor	22 477	- 0,5%
Landscaping tractor	7 775	82,4%
Agricultural trailer (tipping, platform and livestock)	6 648	- 8,8%
Tractor for vineyards and orchards	4 049	- 3,3%
Telescopic loader	3 426	- 14,5%
Round baler	2 022	- 12,6%
Mower	1 416	- 5,7%
Combine harvester	1 277	- 30%
Cover crop	626	- 11,5%
Self-propelled harvester	410	- 11,6%
Self-loading trailer	257	- 4,5%
Self-propelled sprayer	249	- 42,8%
Self-propelled track maintenance	100	31,6%
Self-propelled mixer and silage unloader	73	19,7%

CHANGES IN FRENCH FARMS' OPERATING COSTS BETWEEN 1990 AND 2015

Spending on fuel, oil and lubricants: **x 3**
Spending on feed for livestock: **x 2,5**
Spending on work by third parties: **x 2,2**
Cost of materials: **x 1,5**
Changes in yields:
- Potatoes: **+ 43%**
- Beetroot: **+ 36%**
- Wheat: **+ 18%**

FRENCH R&D FOR AGRICULTURAL EQUIPMENT

Even while farming is undergoing profound changes, companies invested 4.1% of their turnover in R&D in 2018 (compared with 3.6% in 2017). The aim is to develop innovative solutions, such as smarter and more accurate agricultural equipment, to accelerate the ecological transition of agricultural production.

NOTE

More than one manager in two is reporting an economic recovery, with higher growth on export markets. Indeed, sales by companies in the Agricultural Equipment sector (manufacturing and trade) grew by **+6% in the first half of 2018**.
Livestock breeding equipment is by far the fastest growing sector, followed by transport equipment. Producers of sowing, planting and tilling equipment are also experiencing growth.
Even more encouragingly, the **sales outlook remains positive for the second half of the year for 57% of managers (compared with 47% in 2017)**. The most significant increases in sales over the first half of the year were in sowing and planting equipment.
Two thirds of managers expect continued growth (in excess of 2%) in the first half of 2019. These positive forecasts are explained by the increase in farm incomes, the stability of farms' economic health and the decline in farm investments over the past two years.

AND ON THE EMPLOYMENT

The agricultural equipment market in France covers
385 companies and
more than 22,000 jobs.

Hiring on permanent contracts increased by **2,1%** in 2018 and is forecast to rise by + 2,3% in 2019.

KEY MESSAGE FROM FRÉDÉRIC MARTIN, AXEMA PRESIDENT

«We are seeing a significant shortage of production capacity. This is one of the rising and worrying trends of 2018. A third of managers are experiencing major recruitment difficulties, which is one of the main challenges facing companies in the coming years.»

RECRUITMENTS PLANNED FOR 2019, PER SECTOR, IN AGRICULTURAL EQUIPMENT

- Equipment sales reps, France **3%**
- Equipment sales reps, export **1%**
- Spare parts inspector **1%**
- Field technician / breakdown aftersales engineer **9%**
- Office based technical inspector **4%**
- Training function **2%**
- Demonstration and promotion function **3%**
- Product manager function **6%**
- Support function **11%**
- Production function **49%**
- Research and development function **5%**
- Marketing function **2%**
- Design office engineer **2%**
- Design office technician **2%**

Production posts will be the first area of focus, to enable manufacturers to meet growing demand (49% of jobs planned for 2019). After support functions, the sector also intends to recruit mobile technicians (9% of jobs to be filled in 2019).

AN EXHIBITION OF INTERNATIONAL CALIBRE

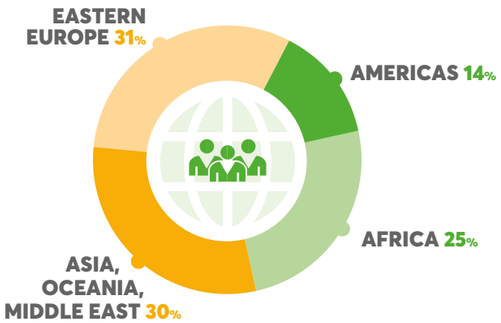
Backed by its expertise and reputation, SIMA is developing its brand and network internationally.

SIMA, LEADING INTERNATIONAL EXHIBITION

With **232,000** trade entries from **135** countries and **360** international delegations in 2017, SIMA has been welcoming growing numbers of international visitors.
For its 78th edition, SIMA is continuing its expansion to become the world's leading agricultural event. For 2019, the show is stepping up its promotional activities through its international network of 47 offices and an active visitor recruitment campaign in more than 90 countries, especially in **Latin America** and **Eastern Europe**.

VISITORS BY GEOGRAPHICAL AREA

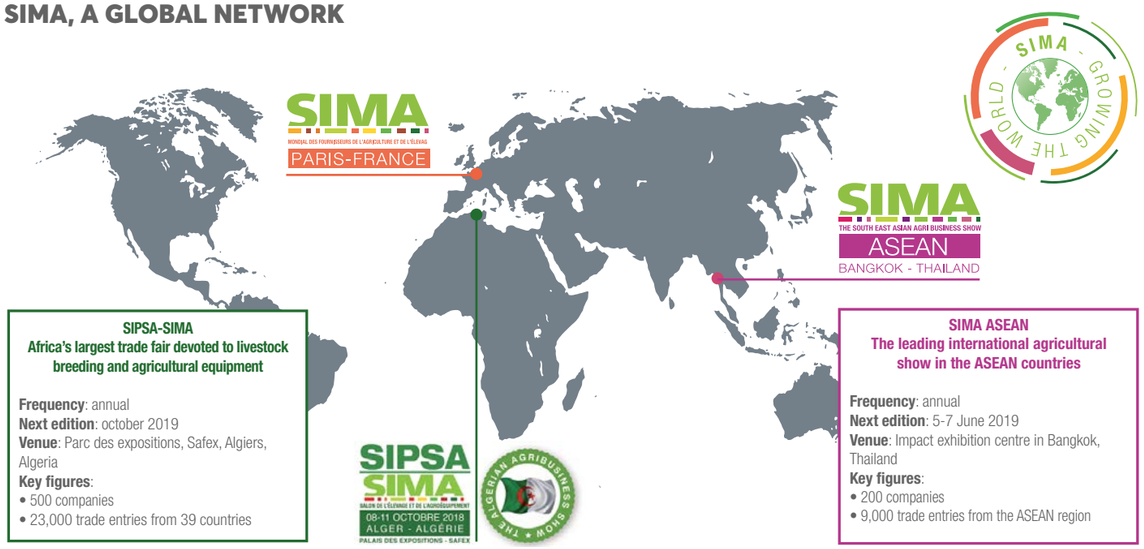
VISITORS BREAKDOWN (EXCLUSIVE WESTERN EUROPE)



MORE INTERNATIONAL EXHIBITORS (+ 12.5%)

- The main growth areas we have seen are the Eastern European countries, Turkey, Germany and Finland.
- The new brands include: Avant (handling/Finland), Basak (traction/Turkey), CEAT (tyres/India), KARATZIS (silage/Greece), Mercedes (transportation/France), Métal-Fach (haymaking/Poland), Mzuri (tillage/Poland), Petlas (tyres/Turkey), SIP (tillage/Slovenia), Pronar (wheels, axles, pneumatic and hydraulic systems/Poland), Upec (tillage/Ukraine), Zurn (tillage/Germany).

SIMA, A GLOBAL NETWORK



SIPSA-SIMA
Africa's largest trade fair devoted to livestock breeding and agricultural equipment

Frequency: annual
Next edition: october 2019
Venue: Parc des expositions, Safex, Algiers, Algeria
Key figures:
- 500 companies
- 23,000 trade entries from 39 countries

SIMA ASEAN
The leading international agricultural show in the ASEAN countries

Frequency: annual
Next edition: 5-7 June 2019
Venue: Impact exhibition centre in Bangkok, Thailand
Key figures:
- 200 companies
- 9,000 trade entries from the ASEAN region

FOCUS ON... UKRAINE

The agricultural sector is an important part of the Ukrainian economy (15% of GDP). Agriculture in the country is partly mechanised, but investment in the sector remains strong ($1.5 billion in 2014). The agricultural equipment market is fairly large ($740 million). Only a third of demand is met by domestic supply.

THE POPULATION OF UKRAINE IS SET TO DECREASE BY 17,7% BY 2050

2017 44,222,900 ▶ **2050** 36,415,706

Agricultural production is worth
$ 27,893 MILLION (2014)

Cereals **83%** | Livestock production **17%**

UKRAINE'S AGRICULTURAL LANDSCAPE

150 farms **> 10 000 ha**

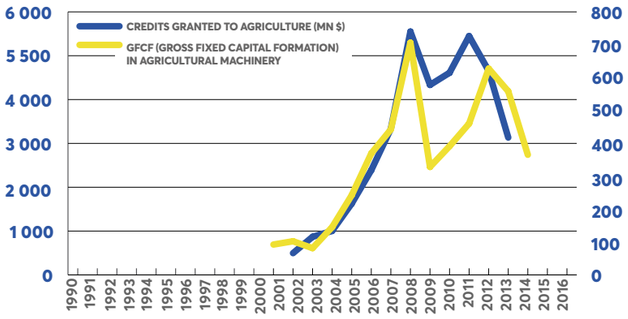
40,000 farms **> 10 ha** and **< 1 000 ha**

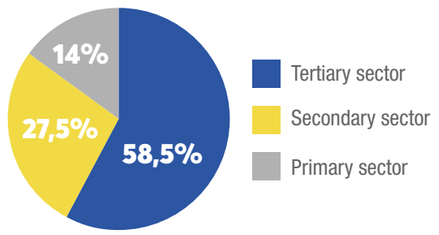
4,1 million micro-farms **< 1 0 ha** (average 1 ha)

58 million ha of land (total country area) ▶ world's **47th** largest country

41 million ha of agricultural land ▶ **71,2%** of the country's total area

33 million ha of arable land ▶ **56,1%** of agricultural land





MAIN IMPORTS – VOLUME (2016)	IMPORTS
Sprayers and similar	882 812
Lawnmowers	91 980
Ploughs	17 428
Agricultural tractors	17 241
Rototillers	16 674
Poultry breeding machines	6 283
Haymaking equipment	4 290
Seeders	3 703
Combine harvesters	2 650
Cereal processing machines	2 425
Fertilizer spreaders / distributors	1 647

	UKRAINE	EUROPE 2016
Agricultural machinery market (Mn $ - 2016)	740 *	44 460
Agricultural machinery production (Mn $ - 2016)	228 *	43 894
M-X US $ bn (Mn $ - 2016)	512	566
Agricultural machines in operation in 2007 (no.)	536 690	–
Of which agricultural tractors in 2007	336 848	–

(M-X) = Imports - Exports - Sources: FAO, World Bank, IHS, UN, Axema

(: AXEMA estimate)*

FOCUS ON... NIGERIA

The agricultural sector comprises one fifth of Nigeria's GDP. With a return to agriculture in recent years (linked to the decline in oil revenues), as well as the forthcoming demographic explosion (+115% by 2050), the importance of this sector can only increase. Nigerian agriculture is still poorly mechanised (85% of farms are family farms) and has a high potential for development.

THE POPULATION OF NIGERIA IS SET TO INCREASE BY 115,1% BY 2050

2017 190 886 000 ▶ **2050** 410 637 864

Agricultural production is worth
$ 64,182 MILLION (2014)

Cereals **97,5%** | Livestock production **2,5%**

NIGERIA' S AGRICULTURAL LANDSCAPE

308,000 farms

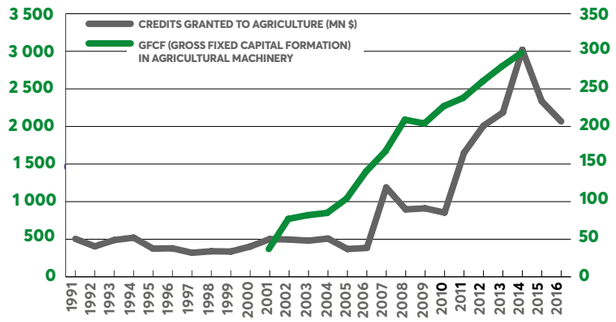
Average size of **85 %** of family farms: **< 1,5 ha**

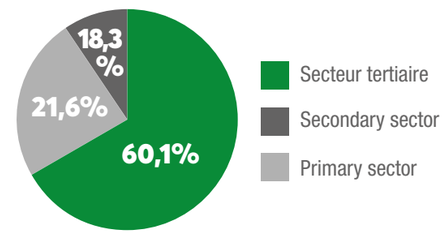
Average size of the remaining industrial farms: **50 ha**

91 million ha of land (total country area) ▶ **33rd** largest country

71 million ha of agricultural land ▶ **78%** of the country's total area

34 million ha of arable land ▶ **37,3%** of agricultural land





MAIN IMPORTS – VOLUME (2016)	IMPORTS
Sprayers and similar	1 197 985
Lawnmowers	345 312
Ploughs	6 126
Agricultural tractors	2 402
Rototillers	1 198
Poultry breeding machines	754
Haymaking equipment	741
Seeders	476
Combine harvesters	457
Cereal processing machines	195
Fertilizer spreaders / distributors	142

	NIGERIA	AFRICA 2016
Agricultural machinery market (Mn $ - 2016)	94 *	2 204
Agricultural machinery production (Mn $ - 2016)	8 *	246
M-X US $ bn (Mn $ - 2016)	86	1 958
Agricultural machines in operation in 2007 (no.)	52 929	–
Of which agricultural tractors in 2007	24 800	–

(M-X) = Imports - Exports - Sources: FAO, World Bank, IHS, UN, Axema

(: AXEMA estimate)*

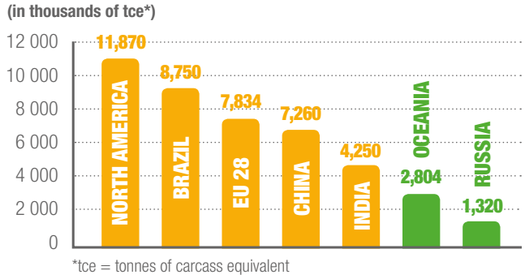
SIMAGENA

THE CATTLE FARMING MARKET

IN THE WORLD

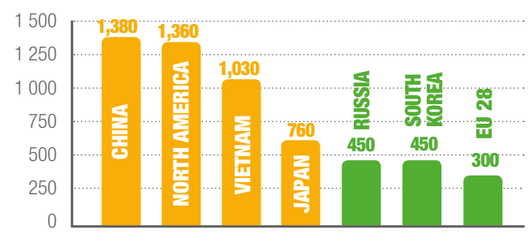
FRENCH, EU AND GLOBAL CATTLE HERD IN 2017
(in millions of head)

GLOBAL BEEF PRODUCTION IN 2017
(in thousands of tce*)



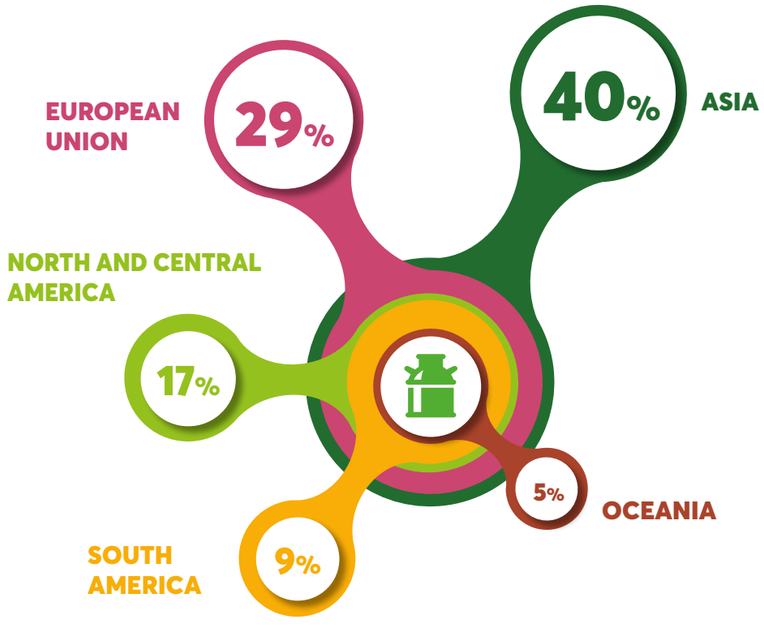
*tce = tonnes of carcass equivalent

MAIN IMPORTERS OF BEEF IN 2017
(in thousands of tce*)



*tce = tonnes of carcass equivalent

GLOBAL COW'S MILK PRODUCTION IN 2017



IN FRANCE

France is **leading** producer and consumer of beef and veal, and **the second** largest milk producer in Europe after Germany.

NUMBER OF COWS IN FRANCE
at 1 January 2017
(in thousands of head)

Holstein Friesian:	2,402
Charolais:	1,450
Limousin:	1,150
Montbéliarde:	628
Cross-breeds:	606
Blonde d'Aquitaine:	485
Normande:	319
Other breed types:	307
Salers:	217
Aubrac:	206
Total:	**7,770**

FRENCH HERD
in December 2017
(in thousands of head)

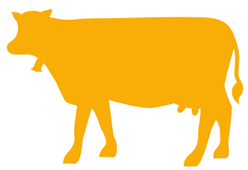
21% of **dairy cows** in France are reared in Brittany.

23% of **suckler cows** in France are reared in Nouvelle-Aquitaine.

More than 2,5 millions

doses of semen, 70,000 breeding animals and several thousand French embryos are marketed worldwide each year.

With **912,000** registered cows and **12,000** evaluated bulls on farm, the French herd is the largest European genetic reservoir for beef cattle breeding.



French national production of beef and veal in 2017 was **1,4 million** tonnes of carcass equivalent.

The numbers of **large bovines slaughtered** in France grew by **3%** between 2017 and 2018.

On-farm artificial insemination is practised by **4,665** farmers in France accounting for **631,000 cases of AI**, **10% more** than in 2016.

INFO +

For more than 20 years, **the annual genetic progress made by the three main French breeds has been between 65 and 100 kg of milk.** In ten years, the average production of a French Holstein Friesian cow has increased **by 1,000 kg per lactation**, solely thanks to genetic improvement of the breed. The official international rankings published by Interbull consistently attest to the excellence of these results, which are recognised for their precision and reliability. **Since 1995, French bulls have been among the best in the world.**

NOTE

All genealogical, performance and genomic data are recorded via a single National Genetic Information System which supplies the national DNA database. Each year, the system records, monitors and evaluates information on more than **4 million** animals, including **26 million** milk recording results, **4.5 million** inseminations and **1.6 million** live weights.

Sources: Institut de l'élevage, France Génétique Elevage, Interbev, Confédération Nationale de l'Elevage, INRA. GEB-Institut de l'Elevage according to Eurostat, FAO, FIL and TradeMap.

THE MEETING PLACE FOR INNOVATION IN GENETICS

In recent years SIMAGENA, the international meeting place for breeding and genetics professionals, has become the benchmark for French companies working in genetic selection and the export of breeding stock.

SIMAGENA combine machinery and livestoc. Located alongside SIMA, SIMAGENA brings innovations in breeding equipment and genetics together in a consistent collection to highlight the sector.

SIMAGENA'S STRENGTHS

Attendance of a large and varied range of dairy and beef cattle breeds
Professional business-focused presentations, using the show ring to illustrate the links between equipment and cattle.
The "French" tradition of livestock contests revisited in a modern way and staged as a true show, presented by internationally acclaimed judges.
International auctions attended by breeders from several European Union countries.

SIMAGENA INTERNATIONAL BUSINESS CLUB

A place to meet and do business for all SIMAGENA exhibitors and foreign delegations.
Attendance over five days of operators who can organise specific presentations on request.
Animal husbandry students on hand to welcome visitors and conduct guided tours for international delegations.

THE RING PROGRAMME

Open shows, genomics presentations, competitions, auctions - the 2019 edition will once again shine a spotlight on the finest cattle breeds. Showcasing the expertise and passion of breeders, the ring holds many new discoveries and highlights for visitors, buyers and exhibitors alike.

SUNDAY 24 FEBRUARY	
	Breed presentations and competitions: Aubrac, Blonde d'Aquitaine, Salers
MONDAY 25 FEBRUARY	
9:30	**Charolais Competition:** - Selection programme presentation by Genes Diffusion - Genetics presentation by Simon Genetic
16:00	**Charolais auction** hosted by Genes Diffusion and Simon Genetic
TUESDAY 26 FEBRUARY	
	Breed presentations and competitions: Montbéliarde, Normande, Holstein **Holstein auction** hosted by Genes Diffusion
WEDNESDAY 27 FEBRUARY LIVESTOCK DAY	
9:30	**Open EuroLimousin show**
13:00 to 15:00	**Round table: how AgTech increases the profitability of livestock farming**
15:30 to 16:00	**SIMBEEF auction of breeding males,** hosted by KBS Genetic
17:00	**Limousin cow and heifer auction,** hosted by KBS Genetic, Beauvallet Plainmaison and Genes Diffusion
THURSDAY 28 FEBRUARY	
10:30	**Inter-breed open show** **Awarding of prizes to the champions of each breed**

SIMA INFO

CONFERENCES AND ROUND TABLES

Programme subject to change without notice.
Programming of speakers in progress.

Simultaneous interpretation in French/English

SATURDAY 23 FEBRUARY

Axema technical meetings:
«Sustainable agriculture: an opportunity for machinery and systems innovation»
Rooms 611 to 618
From 10:30 to 12:30 and 14:00 to 16:00

SUNDAY 24 FEBRUARY

Agronomy: Designing tomorrow's cropping systems today

Round table offered by AXEMA and SIMA, organised with INRA
Hall 4 - mezzanine, from 10:30 to 12:30
Crop production is faced with the aims of increasing production performance and reducing environmental impact. These are major challenges for the cropping systems of tomorrow. This round table will suggest changing how we look at this issue, based on two original approaches: the first is to explore how we can increase the Land Equivalent Ratio (LER) beyond 1; and the second involves the closing of nutrient cycles, especially that of nitrogen.

By copying the fundamental principles of nature, living agriculture uses plant engineering to restore the cycle of fertility. It produces better yields while improving the nutritional quality of the products. Under the patronage of Marcel Bouché, an internationally acclaimed agronomist and earthworm specialist, researchers and farmers from around the world will present the results of their work. Visitors and exhibitors are invited to come and listen to Lucien Seguy, Konrad Schreiber, Alain Canet, Olivier Husson, Marc André Selosse, Ernst Zuercher and many others!

Feed the soil to feed mankind

Rencontres internationales de l'agriculture du vivant
Hall 3 - mezzanine
De 14 h 30 à 16 h 30
"Living agriculture" brings together a set of agricultural techniques known as "agroforestry", direct sowing under cover, conservation or regenerative agriculture, permaculture or market gardening on living soil. These agricultural practices are based on the principle of "feeding the soil to feed mankind".

SIMA Farmers' Dinner by Vazapp

In partnership with Michelin
Hall 2 - SIMAGENA ring, from 19:00 to 22:00 pm
This event has brought together more than 400 farmers to date and aims to reach over 2,000 by 2019. The Farmers' Dinner is an innovative social experience in which farmers share their stories and dreams. The aim is to foster relationships between farmers from all over Europe, but also between farmers and the stakeholders participating in the event. Farmers are finally on the front line and not just in the audience; in this reverse conference, stakeholders and politicians listen to farmers and learn what they need based on their stories. This experience is an informal dinner event. Food becomes the catalyst for relationships and trust, while stories become the basis for informal discussions, a new vision and memories to take home.

MONDAY 25 FEBRUARY

Enhanced agriculture: a reality today and tomorrow

Round table offered AXEMA and SIMA, organised with agridées
Hall 3 - mezzanine, from 10:30 to 12:30
From 10:30 to 12:30
This event will explore whether or not to adopt technology in the agricultural sector, by starting from the actual experience of farmers and putting questions to observers of trends in an ever-changing international "AgTech" ecosystem. From market platforms to GPS sensors, via biotechnology, robotics and genetics, the discussion will focus on the realities of using these new tools and on the most promising innovations. For farm managers involved in this new digital transition, now "enhanced" with ever more customised and facilitating knowledge and solutions, the challenge is to remain responsible, autonomous and innovative on their farms.

SIMA DEALERS' DAY

Co-organised by SEDIMA and SIMA and supported by CLIMMAR
Hall 4 - mezzanine, from 10:30 to 12:30
For its second edition, this symposium co-organised by SEDIMA and supported by CLIMMAR will address the theme of recruitment and employment across Europe via the experience of five leading countries: Germany, United Kingdom, Italy, France and Switzerland. CLIMMAR's President will set out its overall vision on this issue.
The SIMA Dealers' Day is aimed especially at all distributors, importers and dealers attending the exhibition, as well as exhibiting manufacturers from all around the world.
The discussion will be moderated by Benoît Egon, a journalist specialising in agricultural mechanisation, for Terre-net Média. This event will be followed by an opportunity to meet and exchange ideas over a lunchtime cocktail.

Agroequipment: can it contribute to agroecology?

Organised by IRSTEA and INRA
Hall 3 - mezzanine, from 14:00 to 18:00
Agroecology is based on three main principles: reducing inputs, closing cycles and making better use of ecosystem functions. Will this ecologically driven approach be able to do without agroequipment, or will it be obliged to use it? This event will address the issue from two perspectives: reducing the use of plant protection products (especially glyphosate) and the necessary recovery of soil fertility.

CEETTAR general assembly

Hall 4 - mezzanine, from 14:30 to 16:30
Members only

TUESDAY 26 FEBRUARY

Organic farming: Why and how to commit to organic

Round table offered by AXEMA and SIMA,organised with Agence Bio (French Agency for the Development and Promotion of Organic Agriculture), in partnership with Biofil.
Hall 3 - mezzanine, from 10:30 to 12:30
Driven by rising consumption of organic products, the growth and dynamism of organic farming is increasing all the time. "Organic" remains the major growth factor for the food sector. With 85% of French consumers believing it is important to develop organic farming, there are many reasons for their enthusiasm: 91% believe it helps to preserve the environment, 89% believe it is good for health and 75% believe that organic farming creates employment.
The aim of this discussion is to share the experiences of participants in organic farming.French, European and international operators from the top to the bottom of the agricultural supply chain will provide their insights and specific advice on converting to organic farming.

SIMA AFRICAN SUMMIT : Agribusiness in Africa "Positioning agriculture as a business sector"

Organised by AXEMA and SIMA
Hall 4 - mezzanine, from 10:30 to 12:30
Second edition of the summit in collaboration with Farmer's Weekly magazine (South Africa).

Encouraging economic growth in rural Africa, mainly through agriculture and the agri-food industry, should be a priority of the African development agenda.
The topics covered will be:
- increasing agricultural production through technology and mechanisation;
- building a dynamic agri-food sector in Africa.

Hosted by Denene Erasmus, a renowned and multiple award-winning South African journalist and columnist from Farmer's Weekly South Africa.
This event will be followed by an opportunity to meet and exchange ideas over a lunchtime cocktail.

Intergenerational agricultural meetings

Organised by AIYANA
Hall 3 - mezzanine, from 14:30 to 16:30
This round table will discuss both innovative solutions to problems faced by retiring farmers and aspiring new entrants from non-farming backgrounds, and the psychological obstacles that sometimes need to be overcome within such collaborations: how to accept the coexistence of several types of agriculture? On the farmers' side: how to accept that a project with a different vision from the one we have pursued all our lives does not call into question the value of our own work? On the new entrants' side: how to accept that there is much to learn from "conventional" farmers?

Symposium of the #CoFarming international association

Organised by the association #CoFarming

Hall 4 - mezzanine, from 14:30 to 16:30

#CoFarming will be present at SIMA 2019 with its Camping-Car, where visitors will be able to discover many of its activities. But #CoFarming is also organising a symposium bringing together experts and initiatives in the field.

#CoFarming brings together all of the platforms that enable farmers to share, exchange and organise themselves more effectively in order to regain competitiveness. This allows the exchanging and sharing of equipment, land, economic data or know-how between farmers or other players in the agricultural sector.

WEDNESDAY 27 FEBRUARY

Livestock farming: How AgTech increases the profitability of livestock farming

Round table offered by AXEMA and SIMA, with agridées and INRA

Ring - from 13:00 to 15:00

For many years, technological innovations have been driving changes in the farming profession. Simulators, decision-making tools, robotic milking parlours or feeding systems, coordinated use of sensors, information and communication technology, automation, etc. - all of these have led to the coining of the term "precision farming". These technologies are a major source of progress enabling changes in the farming profession. Because farmers can now delegate certain tasks or decisions, in part or in whole, they can aspire to a certain quality of life. These new technologies can also be very useful in improving animal welfare and limiting the use of antibiotics thanks to early detection of problems, thus minimising causes of inefficiency while reducing the volume of work (or number of hours on call). Animal welfare is a key factor in productivity, but so is the welfare of the farmer.

START-UP VILLAGES WORKSHOPS

Organised by La Ferme Digitale, an independent association with the aim of promoting innovation and digital technology for efficient, sustainable agriculture.

Programme subject to change without notice. Programming of speakers in progress.

SUNDAY 24 FEBRUARY	
15:00 to 16:15	**Innovation as a creator of social cohesion: a new factor in economic and civic growth?** Changes in lifestyles and consumption patterns in recent decades have tended to break down existing social links, both horizontally (between consumers) and vertically (between producer, distributor and consumer). The new, sharing patterns of consumption and the desire for quality and transparency - trends resulting from a new globalised civic awareness - are leading to the re-creation of these links. What are the economic and societal impacts? What answers does innovation offer in these ever-changing markets? *Start-up Village, hall 4*
MONDAY 25 FEBRUARY	
15:00 to 16:15	**Digital inclusion, popularisation of tools: a new challenge for tomorrow's agriculture!** Is digital technology available to every farmer? Are telephony and the internet tools to increase competence? How can use of the internet as a tool for farmers' social and economic integration be sustained in the long term? Connected sensors, Artificial Intelligence, decision-making tools: what about good old common sense in all of this? What if this technology could offer us ways to better understand the environment around us? *Start-up Village, hall 4*
TUESDAY 26 FEBRUARY	
15:00 to 16:15	**Agricultural data from space to earth via drones: what is the complementarity?** Everything provides data: satellites, drones, capacitive probes, onboard sensors on agricultural machinery, etc. Do we have to choose, compare or even combine them? Is data management the next challenge for European agricultural policies? *Start-up Village, hall 4*
WEDNESDAY 27 FEBRUARY	
15:00 to 16:15	**The enhanced farmer: a disconnected or re-connected farmer?** «We are moving from intensive agriculture in terms of input use to intensive agriculture in terms of knowledge use.» H. Pillaud To succeed, today's farmers need to be agronomists, economists, communicators, managers, business leaders and so on. Do they also need to become Data Scientists? Data, a new challenge for the world in general, and for the agricultural sector in particular. A vast array of data is being created, both agricultural and non-agricultural. But do we know how to tame it, put it to use and create added value on the simple scale of our farms? *Start-up Village, hall 4*
THURSDAY 28 FEBRUARY	
11:30 to 14:00	**Tweet-Apéro** Professionals, consumer-actors, exhibitors or just curious visitors, why not join us for a friendly tweet-up over drinks on this final of the show, and find out about the agricultural innovations of today and tomorrow! An exclusive event for exchanging ideas with the influencers of the agricultural world, innovative, connected... and positive. *Start-up Village, hall 4*

AMONG THE SIMA 2019 PARTNERS

(NON-EXHAUSTIVE LIST)

FRANCE

AAMF
ACF
ACTA
ADIVALOR
AGENCE BIO
AGRIDEES
AGRONOV
APCA
APECITA
APRODEMA
BIOFIL
BPI FRANCE
CEA TECH
CEETTAR
CER FRANCE
CETIM
CLIMMAR
EURAGENG
FNCUMA
FNEDT
FRANCE AGRIMER
INRA
IRSTEA
KBS GENETIC
LA FERME DIGITALE
LES ASSISES NEO PAYSANNES
NUFFIELD
PAFO
RMT AGROETICA
SEDIMA
SITMA FGR
SOLAAL
TRAME
UNPT
AGRICULTURE DU VIVANT

SOUTH AFRICA

SACAU
FERTASA
SAAMA

GERMANY

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LOHNUNTERNEHMEN E.V.LU
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LANDBOUWSERVICE / AGRO SERVICE

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ASSOCIATION OF AGRICULTURAL MACHINERY DISTRIBUTORS
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NATIONAL AGRICULTURAL SOCIETY

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CAAMS
CAMA
CAMDA

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ASSOCIATION OF KOREA AGRICULTURAL FACILITIES
KOREA AGRICULTURAL MACHINERY INDUSTRY COOPERATIVE (KAMIKO)
KOREA RURAL ECONOMIC INSTITUTE

CÔTE D'IVOIRE

AGENCE NATIONALE D'APPUI AU DÉVELOPPEMENT RURAL
CCI CÔTE D'IVOIRE
CÔTE D'IVOIRE CHAMBER OF AGRICULTURE
NATIONAL FEDERATION OF COOPERATIVE FOOD SOCIETIES OF CÔTE D'IVOIRE

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ASSOCIATION OF AGRICULTURAL EQUIPMENT DISTRIBUTORS
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CHAMBER OF AGRICULTURE
REPRO VET

DENMARK

DANSK AGROINDUSTRI
DANSK MASKINHANDLERFORENING
DANSKE MASKINSTATIONER & ENTREPRENORER
FÉDÉRATION DANOISE DES ELEVEURS DE BOVINS LAIT
FÉDÉRATION DANOISE DES ELEVEURS DE BOVINS VIANDE

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ANSEMAT
ASAJA
ENBA
JARC
UPA

UNITED STATES

EMDA
FEMA

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KONEYRITTÄJÄT
MTK
PELLERVO COOP CENTER
PROAGRIA

INDIA

ENGINEERING EXPORT PROMOTION COUNCIL

IRELAND

FCI (FARM & FORESTRY CONTRACTORS IN IRELAND)
FTMTA (FARM TRACTOR MACHINERY ASSOCIATION)
IFA (IRISH FARMER'S ASSOCIATION)
MACRA NA FEIRME (YOUNG FARMERS ASSOCIATION)

ISRAEL

ISRAEL FARMER'S ASSOCIATION
ISRAEL BIO-ORGANIC AGRICULTURAL

ITALIA

ANGA
CONFAI
UNACMA
UNCAI
VAZAPP

JAPAN

JAPAN AGRICULTURAL MACHINERY MANUFACTURERS ASSOCIATION
MINISTRY OF AGRICULTURE, FORESTRIES AND FISHERIES

MOROCCO

ASSOCIATION OF IMPORTERS OF AGRICULTURAL MACHINERY
CHAMBER OF AGRICULTURE
EACCE
CATTLE FARMING FEDERATION

MEXICO

ANGUS ASSOCIATION
MEXICAN ASSOCIATION FOR THE COFFEE
NATIONAL COMMITTEE FOR WALNUT PRODUCTION
NATIONAL COUNCIL OF AVOCADO PRODUCERS

NIGERIA

AGRICULTURAL SOCIETY OF NIGERIA
ALL FARMERS ASSOCIATION OF NIGERIA
COCOA ASSOCIATION OF NIGERIA
NATIONAL CENTRE FOR AGRICULTURE MECHANIZATION

NORWAY

FELLESKJØPET
GENO SA
NORGES BONDELAG
NORSK BONDE & SMÅBRUKERLAG
NORSK CHAROLAIS
NORSK LANDBRUKSSAMVIRKE

NETHERLANDS

AGRIVAKNET
CUMELA
FEDECOM
NAJK

PERU

AGAP
BREEDERS ASSOCIATION OF LIMA
CCL

POLAND

FEDERATION OF LARGE AGRICULTURAL OPERATORS AND OWNERS
FEDERATION OF WHEAT PRODUCERS
NATIONAL FEDERATION OF DAIRY FARMERS AND PRODUCERS

PORTUGAL

AGROMAIS
AJAP
ANPROMIS
APCOR

CZECH REPUBLIC

AA.ZET - AGRICULTURAL MACHINERY ASSOCIATION
ASZ - ASSOCIATION OF INDEPENDENT FARMERS
CESTR - ASSOCIATION OF CATTLE FARMERS / CZECH BREED
CSCHMS - ASSOCIATION OF CATTLE FARMERS
HOLSTEIN CZ - ASSOCIATION OF HOLSTEIN CATTLE FARMERS

ROMANIA

ASSOCIATION OF BEEF AND VEAL FARMERS
ASSOCIATION OF IMPORTERS OF AGRICULTURAL MACHINERY
ASSOCIATION OF AGRICULTURAL PRODUCERS
HOLSTEIN RO
APPR
MAIS
APIMAR

RUSSIA

UNION OF RUSSIAN LIVESTOCK BREEDERS
ROSAGROMACH
UNION OF FARMERS AND COOPERATIVES
RUSSIAN SERIAL UNION
AGRICULTURAL COMMITTEE OF RUSSIAN PARLIAMENT

SENEGAL

NATIONAL STANDARDS ASSOCIATION
NATIONAL CONFEDERATION OF EMPLOYERS
CHAMBER OF COMMERCE

SWEDEN

LANDSFÖRENINGEN MASKINSTATIONER
LANTBRUKARNA RIKSFÖRBUND
MASKINLEVERANTÖRERNA
NÖTTKÖTSPRODUCENTER
SVENSKA LANTMÄNNEN
SVERIGES MASKINRINGAR

SWITZERLAND

AGRIDEA
AM SUISSE
SWISS FEDERATION OF CEREAL PRODUCERS
PROMETERRE

TUNISIA

APIA
SYNAGRI
UTAP

TURKEY

TURKISH FARMERS' ASSOCIATION
ASSOCIATION OF BEEF AND DAIRY FARMERS
TARMAKBIR
TARMAKDER
CATTLE FARMERS' UNION
UNION OF THE MILK AND MEAT INDUSTRY

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LATIFUNDISTMEDIA
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FARMERS UNION
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KMKYA

VENEZUELA

FEDEAGRO
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INFORMATIONS PRATIQUES

VISITORS

ENTRY PRICES	ONLINE PRICES (INC. TAXES)	PRICES AT ENTRANCE TO THE SHOW (INC. TAXES)
SINGLE VISITOR	€30	€40
SINGLE STUDENT, GROUPS OF STUDENTS	FREE	€40
GROUPE (À PARTIR DE 10 PERSONNES)	€25	€40
CATALOGUE SIMA	€20	€25

PLANNING YOUR TRIP

BY AIR

Preferential rates with Air France KLM.
ID code to quote when booking tickets: 33546AF
More information at simaonline.com

Roissy Charles de Gaulle Airport: 5 minutes from the Paris Nord Villepinte Exhibition Centre.

From the Airport: take the RER line B - direction Paris - stop “Parc des Expositions”, or the free SIMA shuttle bus to Parc des Expositions (departs every 30 minutes from 8:00 to 11:00 and from 16:00 to 19:00).
Orly Airport: take the Orlyval to Antony station, then change to the RER line B - direction Roissy - stop “Parc des Expositions”.

BY PUBLIC TRANSPORT

From Paris (Châtelet / Gare du Nord): take the RER B towards Roissy CDG airport, and get off at “Parc des Expositions”.

BY CAR

15 minutes from the Paris ring road by the A1 and A3 motorways, then A104 slip road, exit “Parc des Expositions”.

GPS coordinates: Longitude 2°31’06”E – Latitude 48°58’03”N

FINDING A HOTEL

Accommodation is available at preferential rates by contacting B-network, the official booking centre for the show:

http://www.b-network.com/ - sarah.david@b-network.com
Tel.: +33(0)1 58 16 20 12

SERVICES ++

ROAD BOOKS AVAILABLE AT WWW.SIMAONLINE.COM

- Practical information about Paris, travel, catering, how to get your badge, catalogue, etc.
- Go to www.simaonline.com/ under “International visitors”

CONCIERGE SERVICES - SERVICES LODGE
RECEPTION GALLERY, ESPLANADE SIDE (BETWEEN HALLS 4 AND 5A)

From 8:30 to 18:00, concierge staff will be available at the Services Lodge or by ringing +33 (0)1 48 63 63 34 00
Services: express delivery of parcels or letters, on-site dry cleaning, taxis, couriers, show reservations, restaurants, visits to Paris, etc.

INTERNATIONAL BUSINESS CLUB SIMAGENA INTERNATIONAL BUSINESS CLUB

- Mezzanine, Hall 6 / Hall 2
- Dedicated space for business meetings, relaxation, catering etc. with free Wifi.

WORLD AGRICULTURE AND LIVESTOCK WEEK: SIA/SIMA SYNERGY

The sector’s two largest trade fairs have combined synergies to offer:
Free shuttles between the two exhibition centres.
- A SIA welcome area in SIMA in Hall 7 of the Parc de Paris Nord Villepinte.
- A SIMA welcome area in SIA at entry V of the Parc de la Porte de Versailles.
- Motorcycle taxis to drive journalists between shows. For more information, contact the CLC Communications team.

JOURNALISTS

GOOD TO KNOW

PRESS AREA NEW!	The SIMA press room provides everything in one place: exhibition logos, press releases and press kits, exhibition photos and videos, and exhibitor press releases, photos and videos. https://www.simaonline.com - Under “Press area”
YOUR ACCREDITATION	Ask for your accreditation in advance at https://badge.simaonline.com/. Your personal badge will be given to you upon your arrival at the press service.
PRESS SERVICE	Press service: Mezzanine - Hall 5a (open from Saturday 23 February 2019) Here you will find the exhibition press kit, press releases from the show, partners and exhibitors, photos of the winning products at the SIMA Innovation Awards, exhibition photos and videos (day by day), information on new products presented by exhibitors, details of events and press conferences organised by exhibitors, etc.
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#SIMA2019

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