



# Smart Farming for Europe

Value creation through *Precision Livestock Farming*

## EU-PLF E-Newsletter

EU-PLF is an EU supported project for bringing  
**Precision Livestock Farming** from the lab to the farm

December 2014

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### More information

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### EU-PLF – expectations 2015

The EU-PLF project which started in November 2012 is set to finish in October 2016. The project is at its halfway stage now. We have made considerable progress and more is still to come. Our next steps in 2015 are:

- to bring the blueprint in a more tangible form and initiate its use by the farmers and our startups;
- to attract two new start-up companies who can create a prototype that will demonstrate new valuable applications of PLF technology;
- to put in use the tool that we have developed and has as a focus to support farmers better in the understanding of their data generated from PLF technology installed in their farm; and
- to extend our models for value creation along the chain by including information and value created at the retailer level.

There is still a lot to keep us busy the next year and we look forward to keeping you informed about the most recent achievements in the project.

It just remains for me to wish you and your family a very happy and healthy new year from all of us working on the EU-PLF project.



Daniel Berckmans  
EU-PLF Project Coordinator

## EC-PLF 2015

We are happy to announce that EU-PLF project will participate in the 7th European Conference on Precision Livestock Farming (EC-PLF) which will be held in Milano, Italy from 15 to 18 September 2015.

Please find more detailed information on the conference and abstract submission on the [conference website](#).

**SAVE THE DATE!**

**15-18 September 2015**  
EC-PLF conference will take place in Milan, Italy

## Advanced Course on PLF

An advanced university course on Precision Livestock Farming (PLF) is being jointly organised by the International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM), through the Mediterranean Agronomic Institute of Zaragoza (IAMZ), and the EU-PLF Project.

The course will be given by lecturers involved in the EU-PLF project and will take place at the Mediterranean Agronomic Institute of Zaragoza from 13-17 April 2015. The programme includes the following:

- Lectures
- Livestock Production today
- Farm animal needs and environmental impact
- Basic principles and examples of PLF
- Analysis of data coming from sensors, images and sounds
- Implementation of PLF in commercial products and services
- Present and future of operational PLF
- Technical visits to the farms
- Group work
- A round table discussion

For more detailed information about the course download the [brochure](#).

We look forward to meeting you in Zaragoza!



## Visualisation tool training for poultry and pigs farms

EU-PLF project partner, **Fancom BV**, organised workshops on the Visualisation Tool which have been developed by the company and used on the poultry and pig farms participating in the project.

A two-day training course was offered (17 and 18 November 2014), with the first day focusing on poultry farmers and the second day on pig farmers. The objectives of the courses were to facilitate and assist farmers who are participating in the EU-PLF project to better understand the tool and the importance of using the logbook of the tool.

The sensors (eYeNamic and Cough monitor) are both systems that do not provide a means to visualize the data being collected. To remedy this, Fancom, through the EU-PLF project, developed a tool for the farmers that allows them to actually "see" the data being collected by those sensors. The visualisation tool was also developed for the web allowing farmers to access it from anywhere in the world. The reason for the development of the visualization tool started with the thought that only when farmers are able to see the data, will they be able to use it to make better decisions to manage their farms and to increase the welfare of the animals.

At the moment there is a lot of data being collected by the visualization tool, several rounds per farm. But it can be difficult to interpret the data especially when farmers do not record in the logbook the activities that are taking place such as animal-related problems, management changes, or other events that could cause increased coughing or agitation among the animals. The importance of using the logbook to assist the researchers to better understand and interpret the data were highlighted. It was also emphasised that to improve the tool and to make it more effective, the farmers and researchers must work closely together and that it will be a continuous learning process for both.



Example of visualisation tool interface.



Fancom BV staff visiting a pig farm participating in EU-PLF.

## Economic model for assessing the value added by PLF

EU-PLF's Value Creation group has created a first draft of an economic model that aims to evaluate the value added by PLF technologies.

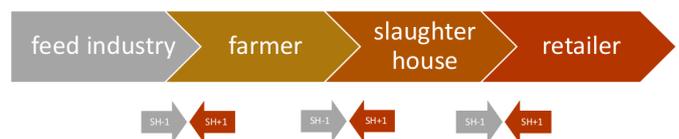
The model calculates the added value based on data compared from two sources: compartments of farm without installed PLF technologies and data obtained from the continuous monitoring and recording of animal performance and behaviour in the compartments where the PLF technologies are operational.

The model has three different versions, one for each group of animals: dairy, poultry and pigs. Technical parameters used to evaluate are: farm size, labour, labour hours, length of growth period, length of cleaning and disinfection, rounds per year, weight at purchase, weight at delivery, slaughtered rate, feed conversion rate, mortality, price of animals at start and at end, cost of feed, cost of labour, delivery costs, health costs, other costs, expected benefit, bonuses and penalties at delivery.

Thus far, it seems that the most promising margins to be expected from PLF technologies are related to the improvement of feed efficiency and optimization of the animal weight at slaughter. Other variables, like decrease in mortality rate, are also key indicators that sensors are helping farmer to manage the farm better and consequently to get higher revenues.

The model also includes information about investments: buildings, inventory and animals. The investment in PLF equipment will be also added to the PLF farm version to calculate the return on investment to the owner. All this information will be used to calculate a total net revenue in order that the farm managers will have a decision support tool to evaluate the investment in PLF technologies.

Investigating how application of PLF technology can create value in the stakeholder chain will be another aspect of the model. Stakeholders include feed mills, farmers (as central element), slaughterhouses and retail, representing the customer. Values that are common for these stakeholders will be identified, and will be measured by suitable existing PLF technologies. The model will focus on detecting win-win values for two subsequent stakeholders – identified as supplier and user – and to get them monitored and steered by PLF technology. It is clear that Win-Win situations ensure a sustainable chain, and the rate of win-win situations can be translated in a “sustainability index”.



“SH” stands for stakeholder.

## EU-PLF meets its farmers

On 26 of August, the partners of the EU-PLF project met with ten farmers who are currently using PLF technology on their farms. The meeting allowed the project partners to have a better understanding of the needs and expectations of the farmers and where the equipment and tools could be improved. It was an invaluable interaction for the partners of the project.



The meeting was led-off by a presentation by one of the farmers in the UK, David Speller, who uses equipment and technology provided by Fancom. David bought a 1960's broiler chicken farm in 2004 and when in the earlier years he had to renovate due to some difficulties, David chose to completely redo the barns, even fitting them with a heated floor. Nowadays, David takes care of over 180.000 chickens in four houses. Efficiency/productivity and the welfare of his birds were the most important reasons for the initial investment in PLF. David strongly believes that technology can significantly improve animal welfare as well as return on investment. In 2009, he was named the 'Poultry Farmer of the year'.

After David's presentation, each farmer met with different partners of the project to have a frank discussion about PLF and what it meant to them. When asked if animal welfare was important in their choice to use PLF, Tina Dahl answered, "You take care of your animals and they will take care of you."



The meeting with farmers came after a day of a Joint EU-PLF/EAAP scientific sessions held at the EAAP Annual Meeting held in Copenhagen, Denmark. The EAAP meeting brought together over 1000 scientists from 60 countries. This allowed EU-PLF to share project results to a wide audience but also articulate how PLF can help in the area of animal welfare, animal health and production as well as the management of farms.

Initially the Joint Session had been envisioned for one session dedicated to PLF but after receiving numerous great abstracts for the topic, it was given a full-day, including parallel sessions. Over 110 scientists from around the world attended the opening session chaired by Ilan Halachmi. The project coordinator Daniel Berckmans and Jeffrey Bewley were the keynote speakers: addressing the European and American perspective (respectively) towards the adoption of PLF. Research presented, of which only four were from EU-PLF project partners, were being conducted in countries of Europe, Israel and the USA which clearly indicated the popularity and relevance of PLF in the field of animal science around the world.

"Having a panel discussion at the end of each session is an unusual structure in the EAAP conferences. Usually a more 'debate' like structure is used with specific predefined themes. Thanks to the flexibility of the organizers mainly Marija Klopčič (President, EAAP Cattle Commission) and Mike Jacobs (Wageningen Academic Publishers), the panel discussions were introduced at the end of each session. By including these, I was hoping to get fruitful discussions between us, the PLF scientists, and the "animal scientists" that usually participate in the EAAP conferences. At the end of the day, quite a few people

expressed their satisfaction and the attendance was relatively high," stated Ilan Halachmi, chair of the Joint Session.

In session 5b of the Joint Session, one of the EU-PLF participants, Heiner Lehr, presented the first year results of the project on coaching and developing entrepreneurship in the field of PLF in a paper titled "Developing SmartFarming entrepreneurship – first year results EU-PLF". In the same session, Dries Berckmans, presented a paper titled "Practical problems associated with large scale deployment of PLF technologies on commercial farms". The paper focused on the main issues that were identified as well as solutions developed during the installation, use and maintenance of the following equipment: SoundTalk's Cough-monitor, Fancom's eYeNamic, PLF Agritech's Weight-Detect<sup>TM</sup>, PLF Agritech's Feed-Detect<sup>TM</sup> and PLF Agritech's Enviro-Detect<sup>TM</sup>.

Another project participant, Andy Butterworth gave a presentation in Session 11a on the potential role of automated chicken monitoring in complying with Council Directive 2007/43/EC which in 2007 set guidelines and standards for the welfare of broiler chickens for meat production titled "Facilitation of assessment of technical measures in implementing the Broiler Directive (2007/43/EC)". While Martijn Hemeryck presented "Three clinical field trials with the Pig Cough Monitor: an overview". This paper concluded that the Pig Cough Monitor (PCM) brings real added value and has huge potential as an early warning system for the respiratory health of pigs. Thus refocusing again on the role of PLF technology in increasing the overall welfare and health of animals in the livestock sector.

The proceedings of the meeting with the 10 farmers will be published by Katholieke Universiteit Leuven in December 2014.

The proceedings from the Joint EAAP/EU-PLF sessions of the EAAP Annual Meeting in Copenhagen will be published in March 2015 by Wageningen Academic Publishers



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