

**An automatic 24/7 diagnostic system
for hoof diseases in bovine**

COWMATIX - Marzio Miodini

EU-PLF Final conference

29 September 2016
Brussels, Belgium



Smart Farming for Europe

*Value creation through **P**recision **L**ivestock **F**arming*

Who we are

Young Start-Up incorporated on May 9th 2016

Marzio Miodini - CEO



Degree in Animal Science; Ph.D. in Zoo Economy
15+ barn design experience – Cow Signals Master Certified
Trainer - Owner of *Segnali dalla Vacca* training school

Leonardo Sala - CTO



Degree in Microelectronics
inventor, programmer, algorithms and systems expert.
Assignee of 20+ patents.

COWMATIX



Smart Farming for Europe

Value creation through **P**recision **L**ivestock **F**arming

COWMATIX Mission

To develop new solutions in the field of Precision Livestock Farming (PLF), that immediately improve the livestock's welfare and increase the farmer's profitability

COWMATIX



Smart Farming for Europe

Value creation through **Precision Livestock Farming**

COWMATIX LE.A.D

- COWMATIX has developed LE.A.D: Leonardo Advanced Diagnostic system.
- It enables the early detection of hoof diseases in bovines, including both infective and bio-mechanical pathologies.
- LEAD operates continuously to promptly detect and notify the occurrence of the most common pathologies when they first appear.

COWMATIX



Smart Farming for Europe

Value creation through **Precision Livestock Farming**

COWMATIX LE.A.D advantages



LEONARDO
italian genius

1. Early diagnosis
2. Continuous automatic 24/7 monitoring
3. Increased reform index
4. Increased milk / cow index
5. Increased deliveries / cow index
6. **15.000 to 60000 € / year / 100 cows recovery**

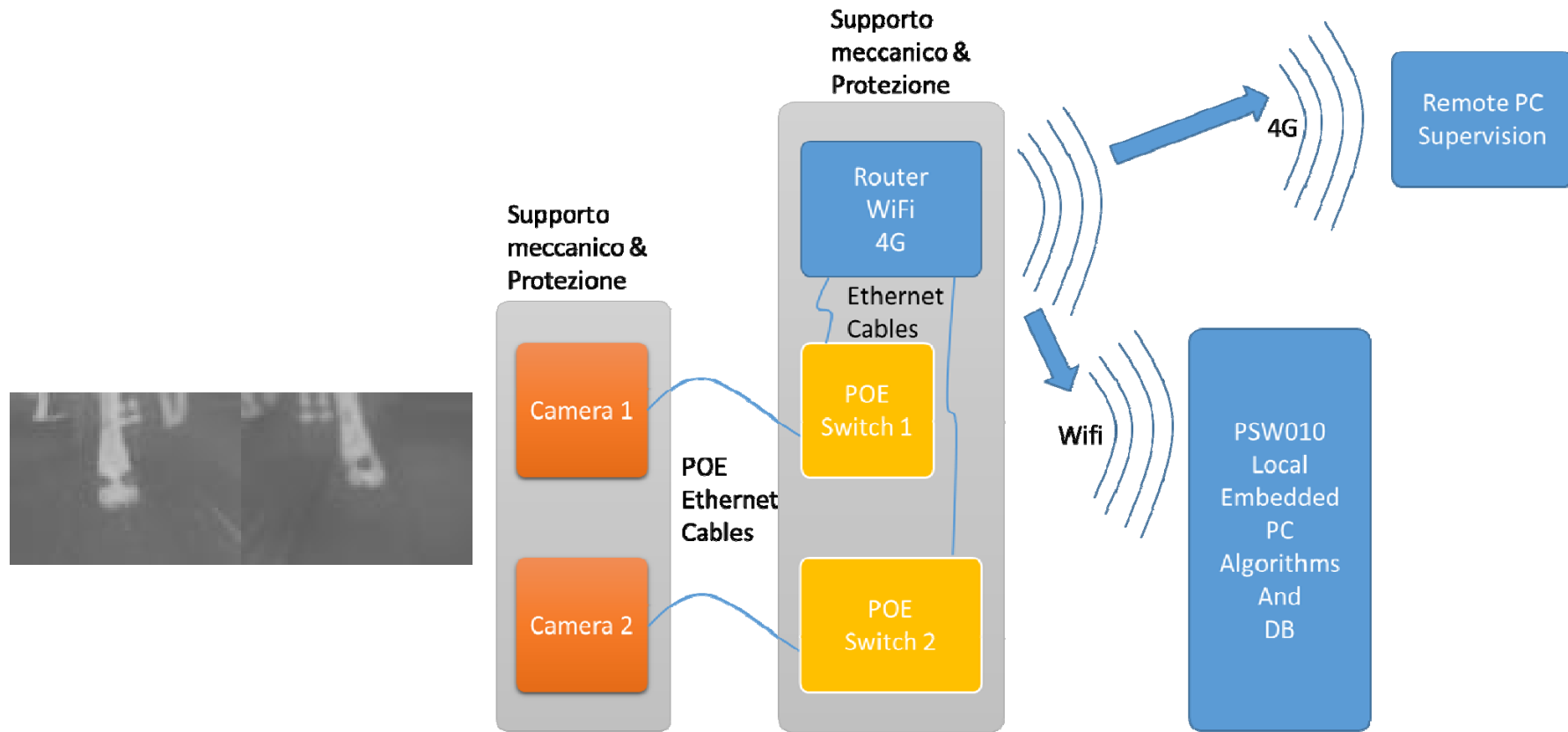
COWMATIX



Smart Farming for Europe

Value creation through **Precision Livestock Farming**

COWMATIX LE.A.D architecture



COWMATIX



Smart Farming for Europe

Value creation through **Precision Livestock Farming**

COWMATIX LE.A.D User Interface

The screenshot displays the COWMATIX LE.A.D software interface. On the left, a grayscale image shows a cow's lower legs being scanned. Below the image, the text reads "Now analyzing cow: 43". On the right, a table lists the analysis results for various cows, including the date, time, cow ID, and health status. A pie chart at the bottom right summarizes the health status distribution.

Date/Time	Cow ID	Health Status
21/09/2016 15:39:39	42	Healthy Cow
21/09/2016 15:34:12	41	Digital Dermatitis
21/09/2016 15:22:45	39	Healthy Cow
21/09/2016 15:18:32	35	Digital Dermatitis
21/09/2016 15:01:42	32	Healthy Cow
21/09/2016 14:57:18	31	Healthy Cow
21/09/2016 14:43:41	29	Healthy Cow
21/09/2016 14:29:59	14	Digital Dermatitis
21/09/2016 12:18:37	6	Digital Dermatitis
21/09/2016 07:19:14	5	Healthy Cow

Legend for Pie Chart:

- HealthyCow (Green)
- DigitalDermatitis (Yellow)
- DigitalPlegmon (Red)
- SoleUlcer (Pink)
- WhiteLineDisease (Blue)

COWMATIX



Smart Farming for Europe

Value creation through Precision Livestock Farming

COWMATIX LE.A.D Status

- First complete installation completed
- Uses low-cost cameras
- Uses low-cost processing unit
- Running since September 5th
- 4000+ diagnoses saved
- Algorithm development keeps going to increase accuracy above 90%
- Algorithm finalization target date is: late November 2016



COWMATIX



Smart Farming for Europe

Value creation through **Precision Livestock Farming**

Thanks



COWMATIX
effective farming

www.cowmatix.com

info@cowmatix.com

COWMATIX



Smart Farming for Europe

*Value creation through **P**recision **L**ivestock **F**arming*

Acknowledgments and Disclaimer



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement n° 311825

The views expressed in this presentation are the sole responsibility of the author(s) and do not necessarily reflect the views of the European Commission.



Smart Farming for Europe

Value creation through **Precision Livestock Farming**