

CHAT

Chicken Health Assessment Tool
Chicken chatter – What chickens want to tell us?

Consortium



Farm “Živko Sekulić”

Sector

AGRICULTURE

Duration

15
MONTHS

Challenge

Food demand, especially for dietary animal proteins, will grow significantly over the next 30 years, resulting in an increased demand for poultry production. At the same time, consumers are becoming increasingly conscious about the environmental impact of meat production, as well as the conditions in which animals are being held. To meet such growing production demands with increased focus on animal wellbeing, poultry producers will have to improve their existing practices, optimize production and introduce solutions that can improve and ensure the wellbeing of their animals. Early detection of different wellbeing issues is crucial for achieving these goals. To that end, the ability to analyse chicken vocalization, identify behavioral patterns and react immediately represent the crucial approaches.

DIATOMIC Support

Several meetings were held with consortium experts, and we have received market and business development support. We have attended Market Phase webinars organized by Diatomic, on the topics of digital marketing, PR, social media and public funding options for start-ups. We have also attended the bootcamp in Stuttgart where guidelines for the successful implementation of experiments were provided, as well as business development support. Monthly meetings with coaches provided us support in better planning of dissemination activities and business development, defining risks and challenges, as well as technical and business KPIs.

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Timeline

During the Design phase, the experiment plan was defined including specification of the required edge devices and how the integration of the different components will be done. In the Development phase, we focused on hardware adaptation, data gathering, training and annotation of datasets. After creating the initial version of the stress detection algorithm, the initial integration of the edge and cloud functionalities was performed, and the solution was deployed on the pilot farm.

During Marketing phase, we are working on implementation of the solution on an additional pilot site and gathering more data that will be used for improvement of the algorithm's accuracy. In parallel, we are preparing marketing materials as well as plans for further business development.

Stakeholders

- Poultry producer as a consortium member.
- Two poultry producers that showed interest in service installation and testing.
- Scientific veterinary institute - providing expert advice and data annotation.
- DunavNET as a solution provider.
- Pessl Instruments as a hardware vendor.
- Poultry farm equipment vendors as potential sales channel partners.

End Users

Mainly poultry farms and food companies. We focus on companies managing large farms as these companies enable us to capture larger market share more quickly. After that period, medium and smaller farms will be addressed. Other end users are food companies interested in providing the solution as an added value with their products.

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Key Results

The key result of the Experiment is the creation of a chicken stress detection algorithm based on chicken vocalisations. Furthermore, we designed and adapted existing edge devices required for monitoring of various parameters in poultry houses. During the experiment, we engaged numerous poultry producers and obtained valuable feedback regarding their needs, as well as the potential of our solution. The ability to detect stress to ensure increased wellbeing of the chickens has proven to be one of the key differentiators on the market, and a feature that is highly appreciated and desired by poultry farms. This was evidenced by the involvement of two additional poultry farms interested to work with us, as well as the received expressions of interest from other poultry farms and feed companies from Europe, North America and the Middle East.

Capturing of training data, especially data when the chickens are under stress has proved to be difficult, while the need to partner up with vendors of equipment for poultry farms has proved to be an important sales channel.

Impact

The project enabled us to acquire significant knowledge about the requirements of the poultry farms, as well as the deployment conditions impacting the design of the edge devices. Furthermore, the project facilitated design and validation of the initial version of a machine learning based algorithm for detection of chicken stress, one of the first ones developed in the world. The fact that the activity was supported by the H2020 programme, combined with the novelty level of the solutions, has sparked interest around the globe and helped us get into conversations with multiple international companies interested in business partnerships and collaboration. Moreover, the project strengthened the relationship between Pessl and DNET and facilitated a joint sales strategy.

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Testimonials

“ *The stress detection algorithm is a step ahead that will make a really huge impact on successful poultry production and animal welfare.*

– Expert from Scientific Veterinary Institute Novi Sad

“ *Information provided according to chicken behaviour and vocalisation will help us better organize everyday activities and react timely when a problem occurs. We are very interested in implementing the solution at all our poultry facilities.*

– Vranić company poultry producer

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