

»»» NEWSLETTER «««

dairy_{4.0}

**Advanced, trustworthy AI and data solutions for
individualised automated milking & feeding of dairy cows**



Co-funded by
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Project funded by



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This work has received funding from the Swiss State Secretariat for Education, Research and Innovation (SERI)

Over the past months, dAlry 4.0 project has achieved significant progress towards the delivery of fully integrated AI-driven ecosystem for dairy farming. Core technologies (Vision Module, Animal Status Classifier, DSS) have matured from prototype developments into operational components integrated through the dAlry 4.0 cloud platform.

Advanced sensing technologies now provide continuous monitoring of animal health, welfare, physiology, and milk quality, while AI-based analytics transform these data into actionable insights for farmers.

The project has also advanced the deployment and validation of key technologies under real farming conditions, bringing dAlry 4.0 closer to delivering trustworthy, data-driven decision support for sustainable and efficient dairy farm management.



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➤➤➤ Vision-based animal monitoring

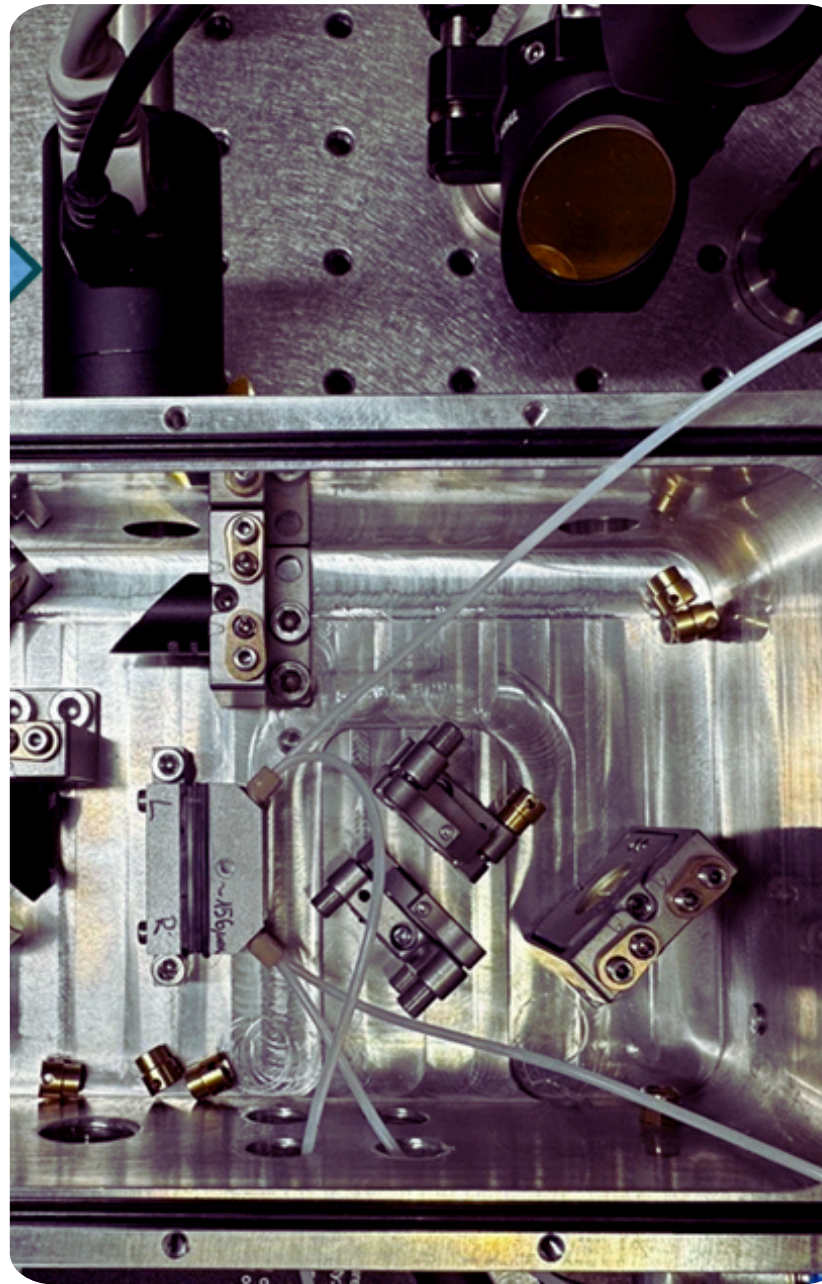
The dAlry 4.0 Vision Module has continued to evolve into a comprehensive animal monitoring platform capable of assessing multiple health and welfare indicators directly during routine milking operations. The system combines computer vision, thermal imaging, depth sensing, and AI algorithms to automatically estimate Body Condition Score, monitor rumen activity, assess udder health, estimate eye temperature, and measure vital signs without physical contact. Extensive testing under operational farm conditions demonstrated strong performance and robustness, highlighting the potential of non-invasive AI technologies to support continuous animal health monitoring and early disease detection.

➤➤➤ Milk Quality Analysis module

Another important milestone has been reached in the milk quality analysis subsystem.

The prototype integrates:

- An automated homogenisation unit
- Filtration and sample preparation modules
- An optical sensing system for spectral analysis



Initial laboratory validation confirmed the stability of the measurement workflow and demonstrated the feasibility of rapid milk analysis within the robotic environment.

These results support the next phase of integration with the milking robot and the cloud-based data platform



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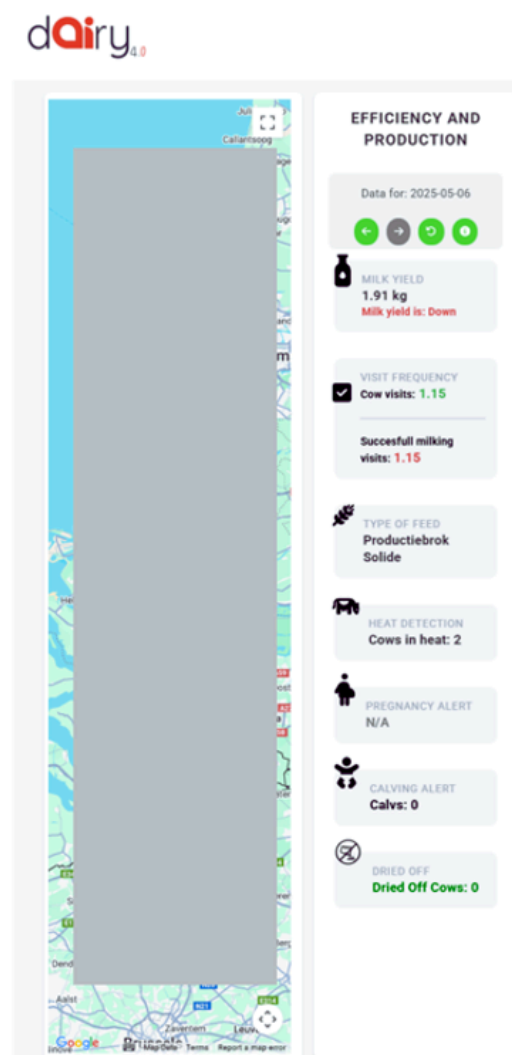
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➤➤➤ Data Infrastructure & Cloud Platform

The dAlry 4.0 cloud platform has reached a mature stage, enabling secure data collection, storage, processing, and sharing across all project components. By integrating data from sensors, analytics tools, and decision-support modules, it provides a unified environment for seamless information exchange and monitoring. Through standardized interfaces, advanced security features, and customizable dashboards, the platform delivers powerful analytics and visualizations, giving farmers and stakeholders easy access to actionable insights.



➤➤➤ Decision Support System (DSS)

The dAlry 4.0 Decision Support System (DSS) is now fully integrated into the cloud platform, transforming farm and animal data into actionable alerts, recommendations, and notifications. Supporting herd management, milk quality, animal health, feeding, and reproduction, it provides farmers with explainable insights through a user-friendly interface and customizable notifications. The DSS is also exploring predictive AI capabilities for mastitis detection. Initial machine learning experiments using over 115,000 milk records showed promising results, demonstrating the potential of combining predictive analytics with rule-based decision support to enable earlier disease prevention and intervention.



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30M Consortium Meeting

This March, the dAlry 4.0 consortium met at Universitat Autònoma de Barcelona (UAB) in Barcelona, Spain for the project's 30M consortium meeting, bringing partners together to review progress and plan the next phase of work.

The meeting focused on key technical and coordination activities across the project, including animal status classification, milk quality analysis, milk partitioning and sample preparation, robotic system integration, individual feeding control, simulation tools, and the development of the data platform, DSS and Digital Twin.

The programme also included breakout sessions and a visit to the UAB lab and experimental farm.



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ECPLF 2026

dAlry 4.0 was presented at ECPLF 2026 in Valencia, Spain, where UAB showcased project advances in AI-based animal monitoring, health assessment, and digital decision support. The conference increased the project's visibility within the precision livestock farming community and fostered collaboration with researchers and stakeholders working towards sustainable livestock production.

Future Ready 2026

dAlry 4.0 was featured at the ADRA Future Ready 2026 Success Stories Showcase, presenting its achievements in AI-driven dairy farming. The event increased project visibility, facilitated knowledge exchange with other EU initiatives, and supported networking for future collaborations and exploitation opportunities.



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Researchers Night 2026

CYRIC participated in the Cyprus European Researchers' Night 2026, showcasing the dAlry 4.0 project to the wider public. Through discussions, CYRIC presented the project's objectives, key technological innovations, and achieved milestones, highlighting how advanced AI, data analytics, and digital farming solutions can support the transformation of the dairy sector towards greater sustainability, efficiency, and animal welfare.

ICAR Conference

dAlry 4.0 was promoted at the ICAR 2026 Conference in Verona, Italy through a project banner presented by AUTH, increasing the project's visibility among the international livestock and dairy research community



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Wrapping up our second newsletter edition, we're thrilled by the progress within our **dAlry 4.0** project.

Our vision for sustainable agriculture propels us forward.

With gratitude to our partners, we stride into the future, eager to pioneer advancements in dairy farming.

Stay tuned for updates as we revolutionize the field through technology and commitment.

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