



Case Study Pilot 4.2

DEMETER Enabler Hub (DEH)

DEMETER's goal is to lead the digital transformation of Europe's agri-food sector through the rapid adoption of advanced IoT technologies, data science and smart farming, ensuring its long-term viability and sustainability. Twenty real-world pilot projects, grouped into five pilot clusters, are running within DEMETER to demonstrate and evaluate how agricultural innovations and extended capabilities benefit from the interoperability mechanisms.

DEMETER focuses on interoperability as the main digital enabler, extending the coverage of interoperability across data, services, platforms, M2M (machine to machine) communication, and online intelligence but also human knowledge, and the implementation of interoperability by connecting farmers, advisors and providers of ICT solutions and machinery. As part of this DEMETER has developed the DEMETER Enabler Hub (DEH) to make resources available to developers to guide the deployment of adopted technologies as well as ownership of resource factors.

What is the DEH?

As a core module of DEMETER Architecture, the DEMETER Enabler Hub centralises the full description of all the components, devices, services, data sources, platforms, etc. that are accessible for exploitation and ultimately for deployment.

How does the DEH work?

The DEH provides the registration of resources, their maintenance and discovery and allows DEMETER Providers to promote their resources making them reusable by different DEH users. Users have two roles - DEMETER provider and/or DEMETER consumer.

A DEMETER provider is able to offer his/her resources, while DEMETER consumers are able to browse the catalogue and find suitable resources matching their requirements.

The resources hosted in the registry can be discovered and made accessible via the web interface, but also via API's.

What are the benefits of the DEH for the end-users?

End-users as DEMETER providers, through the DEH, can promote their resources that thus can be validated by different DEMETER consumers. On the other side, DEMETER consumers are able to browse the collection of registered digital tools and services, and find suitable resources matching their requirements.



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Pilot 4.2: Consumer Awareness: Milk Quality and Animal Welfare Tracking Management

Pilot Overview

This pilot focuses on implementing an information flow optimization across different actors of the milk supply chain ensuring the transparency of all stages. The farmer already monitored animals by using different smart devices, but collected data was scattered and prevented him/her from an overall vision of the most important animal welfare indicators. Thanks to this pilot, the farmer wants to carefully monitor all the relevant parameters (both related to animal welfare and milk quality) captured in different files or provided by different systems in order to monitor the herd health. The processing company intends to know the milk quality levels, as they pay farmers a variable premium based on pre-defined quality indicators of milk.

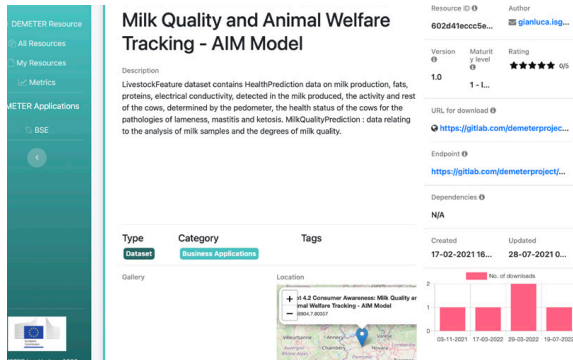
Using the DEH

The use of DEH was considered a fundamental module for sharing and make them available within the DEMETER community the solutions developed within the pilot 4.2. For this reason, the role of provider was chosen as a grant for the access of the pilot's stakeholders. Through this role, stakeholders can both create new resources, mostly machine learning solutions for animal welfare and milk quality,

but also discover new enablers, developed in other pilots or made available by the developers of the various technical Work Packages by either making the solution more interoperable or adding security to the technology stack and so on. The process of registering a new resource is a very easy task to perform; using DEH web interfaces, no distinct technical skills are required to add a new resource. The DEH module also makes available a REST API framework to interact with other modules or external systems for a technical integration or low-level interaction. Furthermore, even the connection of the modules was not complex, given the use of a shared data model (AIM), fundamental for the interoperability mechanisms between different enablers. The DEH will help pilot 4.2 stakeholders to further improve and enrich the logic behind each enabler through the collaboration with other pilots of cluster 4 who have the same interests and needs closely related to their business. The discovery feature will allow other operators of the zootechnical sector, for example, to better understand how the solution developed in pilot 4.2 can somehow satisfy their needs.

Benefits for the end user

The DEH gives the possibility to promote solutions and find other partners interested to reuse and improve them. Through the DEH, users would have the possibility to use datasets that could allow them to train the algorithm on which DSSs are based.



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