

FOODIE (Farm-Oriented Open Data in Europe) Project

"EU-wide data sharing and handling experiences" session

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1. Project ID

- FOODIE (Farm-Oriented Open Data in Europe) CIP-ICT-PSP-2013-7
- Focus: Use and promotion of Open Data for agricultural applications.
- Total cost: € 5,921,971.00
- EU contribution: € 2,960,985.00
- Duration: from 01/03/2014 to 28/02/2017
- Duration: 36 months
- FOODIE consortium: 12 organisations from 7 countries
 - Industrial partners: ATOS (Spain), SERESCO (Spain)
 - Academia & Research: WIRELESSINFO (Czech Republic), CTIC (Spain), PSNC (Poland), TDF (Latvia)
 - SMEs and End users: PROGIS (Austria), MJM LITOVEL (Czech Republic), BODEGAS TERRAS GAUDA (Spain), NETCAD (Turkey), ENCO (Italy), CONSORZIO BIM (Italy)





2. Setting the scene





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FOODIE project aims at building an open and interoperable agricultural specialized platform hub on the cloud

- for the **management of spatial and non-spatial data** relevant for farming production;
- for discovery of spatial and non-spatial agriculture related data from heterogeneous sources;
- integration of existing and valuable European open datasets related to agriculture;
- data publication and data linking of external agriculture data sources contributed by different public and private stakeholders allowing to
- provide specific and high-value applications and services for the support in the planning and decision-making processes of different stakeholders groups related to the agricultural and environmental domains;
- provide a marketplace where data can be discovered and exchanged but also external companies can publish their own agricultural applications based on the data, services and applications provided by FOODIE.

4. FOODIE Pilots



The pilots foreseen in the funded project phase are:

- Pilot 1: Precision Viticulture (Spain) focuses on appropriate management of the inherent variability of crops, an increase in economic benefits and a reduction of environmental impact.
- Pilot 2: Open Data for Strategic and Tactical Planning (Czech Republic) aims at improving future management of agricultural companies (farms) by introducing new tools and management methods, which follows the cost optimization path and reduction of environmental burden, improving the energy balance while maintaining the production level.
- Pilot 3: Technology allows integration of logistics via service providers and farm management including traceability (Germany) focuses on integrating the German machinery cooperatives systems with existing farm management and logistic systems as well as developing and enlarging existing cooperation and business models with the different chain partners to create win-win situations for all of them with the help of IT solutions.

5. FOODIE Platform





It relies upon agreed international standards INSPIRE AF, EF, TN data specifications CAP IACS (Common Agricultural Policy Integrated Administration and Control System) ISO standards of 19100 series

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5. FOODIE Platform

Datasets available in FOODIE repositories

- LANDSAT-8 imagery
- SENTINEL-2 imagery (Copernicus program)
- Statistics from Eurostat
- OpenLandUse (created from Open Street Map)
- Water database
- Point of interest
- Open Transport Map (from OTN project)
- Pilot specific datasets
 - LPIS Data
 - Cadaster data
 - Sensor measurements
 - Crop data
 - Machinery Tracking measurements
 - Weather Stations observations
 - Treatment Plans
 - Fertilizers
 - Temperature and Moisture on foliage
 - Leaf wetness



Satellite data



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5. FOODIE Platform





6. Conclusions



- The data stored in the FOODIE platform are essential for the management of precision zones, for precise application of fertilizers and pesticides, ground water level and quality observation, monitoring of nitrate leaching into water, when and where to start the harvesting, and predictions on expected production by a single management zone.
- A novel standardized interoperable data model developed to manage heterogeneous data within one platform simultaneously with the client application, which allows end-users to make visualization and analysis of farm data.
- ❑ Open data are the key value of FOODIE, but also volunteered data and knowledge shared among user's communities. FOODIE promotes participation of stakeholders and end users (high value data owners) in terms of "the more information you provide to the hub, the more data and services for free you will enjoy". Also, this approach will help to build virtual communities and exploit social knowledge.

6. Conclusions



- □ FOODIE platform offers a complex set of tasks
 - telematics to/from the field
 - fleet management
 - reduction of environmental impacts
 - improving the energy balance
 - Openness and cloud computing
- The biggest advantages are openness and interoperability with other systems such as (inter)national environmental and agronomical registers.
 - INSPIRE, COPERNICUS and/or GODAN may be integrated as a part of the FOODIE hub
 - Respecting standards for geographic information
 - Open Geospatial Consortium's (OGC) Web Map Service (WMS), Web Feature Service (WFS), Catalogue Service for Web (CSW),...
 - RESTful APIs
- Customizable and scalable



7. Joint activities



FARM-ORIENTED OPEN DATA IN EUROPE



Dissemination Activities

Joint events, hackathons, workshops, newsletters, posters

Open Science

Sharing of knowledge, joint papers

Technical Cooperation

End-Users Training Evaluation of pilots and recommendations Best practises Sharing Datasets

Useful links





- Farming Portal: <u>http://foodie-data.wirelessinfo.cz</u>
- FOODIE contribution on OGC: <u>http://www.opengeospatial.org/blog/2312</u>
- Public Deliverables: <u>http://www.foodie-project.eu/downloads.php?idc=5</u>
- Papers: <u>http://www.foodie-project.eu/downloads.php?idc=35</u>
- Newsletters: <u>http://www.foodie-project.eu/downloads.php?idc=23</u>
- Factsheets: <u>http://www.foodie-project.eu/downloads.php?idc=21</u>
- Interactive group on LinkedIn: <u>https://www.linkedin.com/groups/4350866</u>
- FOODIE UML data model: <u>https://git.man.poznan.pl/stash/projects/FOOD/repos/model/browse/</u>
- FOODIE Ontology: <u>https://git.man.poznan.pl/stash/projects/FOOD/repos/model/browse/foodie.ttl?raw</u>





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