D6.2 – SCIENTIFIC WORKFLOW GENERATION

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EXECUTIVE SUMMARY

In the domain of food safety modelling two use cases were identified where scientific data analysis workflows and software based resources for knowledge sharing and integration are of extraordinary importance. The domain specific Virtual Research Environments (VRE) hosted on the D4Science platform provide a promising infrastructure to support the need for scientific collaboration and knowledge exchange. Specifically, the two use cases will showcase how specific services for collaboration, storing and sharing of data and knowledge can be used. The use cases will further demonstrate the benefits of adopting standards as these contribute to increased efficiency along the whole knowledge generation processes.
The VREs from the Food Safety Risk Assessment community address two different independent research areas:

- The first VRE “DEMETER” will support the early identification of issues in the food (and feed) chain. Therefore, it is planned to set up this VRE as a knowledge exchange portal for this area. As a specific feature it is planned to demonstrate how KNIME-based data mining workflows can be shared and applied from within the VRE. This includes a demonstration how VRE-based computational resources support computational intensive data mining processes in this area.
- The second VRE “RAKIP_portal” will support risk assessors and risk modellers in their efforts to share their knowledge (data, mathematical model, simulation results) in a harmonized way. Specifically, this VRE will set up a prototypic community-driven food safety model repository, which contains mathematical models from the area of predictive microbial modelling and Quantitative Microbial Risk Assessment (QMRA). In addition, the VRE will demonstrate how VRE-based computational resources can be exploited when scientist want to create and run own model-based simulations from those models made available in the community model repository. In addition, this VRE will contain general information that support the adoption of harmonized data formats for knowledge representation as e.g. controlled vocabularies, ontologies and information exchange standards.

D6.2 - Scientific Workflow Generation is a software deliverable and it has been created on the public space of the AGINFRA+ Wiki. It is accessible through the following link:

https://support.d4science.org/projects/aginfraplus_wiki/wiki/D62_-_Scientific_Workflow_Generation