



European Network for the durable exploitation of crop protection strategies

IA3 Activity: Human resource exchange

ENDURE - Internal Mobility

Final activity report

Topic of the visit

1. Information about researcher and sending partner

Name and surname: *Krumpe, Jens*

Professional status: *junior scientist*

Sending partner: *Julius Kühn-Institute (JKI), Federal Research Centre for Cultivated Plants*

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2. Information about hosting partner

Hosting partner: *Scuola Superiore Sant'Anna*

Institute/Department/Research Unit: *Scuola Superiore Sant' Anna*

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3. Information about the visit

Starting date: 13.07.2009 – Ending date: 24.07.2009

Starting date: 09.12.2009 – Ending date: 23.12.2009

Total duration: 4 weeks

4. Description of the activities and outcomes

Background and context:

Spatial data are crucial for risk-assessment of pesticide use and their practical application. Spatial data sets of the EU-Member States are not compatible each other yet. To avoid obstacles of data incompatibility it is essential to find solutions, to support the harmonisation of environmental spatial and non-spatial data to be used within ENDURE. Especially in cross boarder research projects harmonized spatial data sets are prerequisite. Furthermore easy and free access to the latest knowledge in strategic areas is crucial for EU research competitiveness.

Therefore it is mandatory, to harmonize environmental spatial data such risk-data or several data in agricultural themes like Land-Use, Climatology or Biota. To fulfil the scope of ENDURE it is important to consider a cross-linkage to superordinate environmental networks like GMES© or HUMBOLD© (EU-founded projects). GMES (Global Monitoring for Environment and Security) is the European Initiative for the establishment of a European capacity for Earth Observation. The semantic data-model-transformation within different spatial-data-models is the main objective of HUMBOLD© Project.

<http://www.gmes.info/>

<http://www.esdi-humboldt.eu/home.html>

Objective:

- *Specify the commonalities between the scope of ENDURE and GMES / HUMBOLD*
- *Investigation in data models and data model transformation*
- *Use- Case analysis of a system's behaviour that is able to publish and search collections of descriptive information (metadata) about spatial data sets, services and related resources.*
- *Software prototyping*

Activities carried out:

- *Analysis of the relation between super ordinate environmental networks and projects on EU- level (GMES, INSPIRE, HUMBOLD, ORCHESTRA)*
- *Development of a generic approach of GIS – aided Risk Assessment (RA)*
- *Adaption of the generic approach to reengineering existing risk assessment models (SYNOPS) (Outcome: Use Case)*
- *Developing OGC compliant Geo Web Services for case study regions e.g. Lake Constance (Outcome: Software- Prototype)*
- *Deployment of a Catalogue Web Service according INSPIRE application*
- *Development of an browser based interface to providing an easy-to-use interface to access spatial data sets especially for risk assessment matters (Outcome: Software- Prototype)*

5. Links between visit activity and ENDURE

Harmonisation of environmental and spatial data according to SEIS and INSPIRE (M25-M38)

<http://ec.europa.eu/environment/seis/>

<http://inspire.jrc.ec.europa.eu/>

The activities enriched Research Activity 3.3 in order to keep the models SYNOPS compatible and to facilitate the integration of Risk Assessment models with the LCA procedures.

Therefore a conceptual work was done by developing a generic approach of GIS – aided environmental Risk Assessment. Furthermore a Web-based Map Server was set up to provide the results of environmental Risk Assessment for the case study region Lake Constance.

To provide Researcher a fast access to spatial data sets a Catalogue Web Service (CSW) and a Metadata-Editor was set up as a prototype. It allows easy and near time access to available spatial data and thematic maps important for risk assessment and life cycle procedure.

6. Impact

Added value for the researcher:

To ensure that the spatial data infrastructures within the countries of ENDURE Members are compatible and usable, this exchange visit gave me a detailed insight in the national INSPIRE actions and sub actions such as GMES / HUMBOLD taken by Italy. I developed strategies to cope with national spatial data infrastructures, that are less harmonised then for example the German SDI. The knowledge about current strategies is essential for attempts in harmonising national approaches to create a common European spatial data infrastructure. It's clear now, that some activities within the ENDURE network are strongly related to other EU-projects like HUMBOLDT and to implementation of the INSPIRE directive which will be implemented by member states.

In a technical point of view the exchange gave me insight in the implementation, exploration and adoption of tools to manage spatially referenced resources of different ENDURE partners through the web.

Added value for sending partner and hosting partner:

For both the Italian partner Scuola Superiore Sant' Anna and the German Julius Kuehn-Institute the ongoing INSPIRE processes in European countries is an important topic as spatial data related to (pesticide) risk assessment is listed in the INSPIRE Annex III. The exchange provided the opportunity to support the establishment of networks of researchers in the domain of information technology in support of agricultural production and pesticide management.

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Jens Krumpe



Dr. Maurizio Sattin
IA3 activity leader

Approved

