



State Office for Nature,  
Environment and Consumer  
Protection North  
Rhine-Westphalia



## INSPIRE data harmonization

### The Customer

LANUV NRW - The State Agency for Nature, Environment and Consumer Protection (North Rhine-Westphalia, Germany) is the superior state authority for matters related to nature conservation, technical environmental protection for water, soil and air as well as consumer protection and food safety.

LANUV NRW is a specialized scientific government agency, with law enforcement competency, assigned to North Rhine-Westphalia's Ministry for Climate, Environment, Agriculture, Nature and Consumer Protection.

[www.lanuv.nrw.de](http://www.lanuv.nrw.de)

### The Challenge

Fulfillment of INSPIRE targets, aiming the data harmonization and schema translation from existing data to an INSPIRE compliant data model. The main challenge and project focus was to describe this process semantically and to implement translation rules which can perform the transformation of the entire source dataset. The project covers all essential steps: the data harmonization process in the primary system for data management and storage, the transformation of primary data to INSPIRE compliant data structures and the publishing of INSPIRE View and Download Services for the protected sites data in the geoportal of NRW.

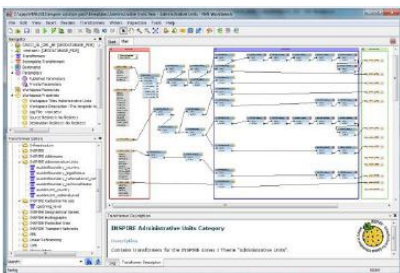
### The Solution

Based on the INSPIRE Solution Pack for FME the complete schema mapping and translation process for protected sites (full and simple schema) could be described and implemented. Starting with FME Workbench templates which are predefined for the specific INSPIRE Annex theme it was possible to connect the complex OSIRIS source data model of the nature conservation data of NRW to the INSPIRE Geodatabase of ArcGIS for INSPIRE. After completing the data integration process publishing of the INSPIRE View and Download Services could be efficiently authored and administrated using ArcGIS for INSPIRE. This step was technically implemented by IT.NRW, the central IT service provider of the federal state of North Rhine-Westphalia. The services and the underlying data were published in the geoportal of North Rhine Westphalia ([www.geoportal.nrw.de](http://www.geoportal.nrw.de)).

### Technology Used

- FME and INSPIRE Solution Pack for FME
- ArcGIS for INSPIRE

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## Customer's Opinion

Once we've blown a breach in the thickets of INSPIRE specifications and once a path was found for an easy transformation of INSPIRE relevant local data sets on Protected Sites. We are calmly looking forward to provide other data from OSIRIS for the thematic scope of nature, e.g. "habitats and biotopes".

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## Benefits

Extracting the full information of this complex source data set was easy due to the flexibility of the used FME technology. The semantic aspects of the mappings and the documentation were mainly delivered through an iterative process between the technical specialists and the domain experts which is a common approach for INSPIRE data harmonization projects. For the complex mapping process, a reusable custom OSIRIS format reader was created in FME to encapsulate the format-specific complexity from the semantic mapping of the INSPIRE attributes. After the initial definition of the mapping description, updates can automatically be processed, guaranteeing also that the INSPIRE services based on that data will be up to date.

ArcGIS for INSPIRE as a commercial of the shelf software provides an easy workflow for publishing INSPIRE network services. It is fully integrated into the existing Esri-based infrastructure and offers many advanced capabilities.

One of the main benefits is the usage of a standardized database storage which makes INSPIRE data also available for other web and desktop applications, business processes and complex workflows. The data integration part is described and performed at the feature level using the INSPIRE Solution Pack for FME which reduces the complexity of this task. GML creation, validation and Geodatabase design is covered by ArcGIS for INSPIRE, thus hidden from the customer, enormously simplifying the provision and administration of INSPIRE Network services.

## Summary

The specified INSPIRE data harmonization workflow is one of the first solutions which describes the complete process from existing data to the annex I theme "protected sites". It covers all essential steps and greatly reduces the complexity of this task.

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