

CRC 806 – Our Way to Europe

Culture-Environment Interaction and Human Mobility in the Late Quaternary

SFB / CRC 806 database: Integrating Typo3 with GeoNode and CKAN

Christian Willmes, Yasa Yener, Anton Gilgenberg, Georg Bareth GIS & RS Group, Institute of Geography, University of Cologne (c.willmes, yyener, agilgenb, g.bareth)@uni-koeln.de

Why changing a running system?

The CRC806-Database web portal is online and running since 2010, the system (see Fig. 1) consisting of a Typo3 based web portal frontend, a CKAN based metadata catalogue, and a MapServer, MapProxy, and pyCSW based SDI, as well as a GeoExt based WebGIS, is described in detail in previous publications, e.g. Willmes et al (2014). During operation of the system we observed some issues and problems, which led to a re-implemntation of the web site frontend.





Fig. 2: Screenshot of rendering issues of the AngularJS based frontend.

Issues and problems of the 1st CRC 806 DB version

The **AngularJS** based catalougue frontend proved to be instable and had severe **rendering issuses** (see Fig. 2), if CKAN server response was delayed. Another significant problem was the lack of influence on the resulting **HTML markup** rendered by AngularJS. This prevented form **RDFa** markup of the webpages. To fix these issues, the frontend is reimplemented in Typo3 **Extbase & Fluid** technology (Rau et al. 2013).

Bibliography Database

In order to have a central "point of entry", to avoid redundant entry of publication records for researchers and projects within the CRC 806, a publication database including interfaces to the three web



sites of the CRC 806 was Fig. 3: The bebliography database as backend for

GeoNode based SDI

We also cannged the backend of the Spatial Data Infrastructure (SDI). It was decided, to move to a GeoNode based SDI, because it is easier to maintain and update, compared to the SDI implemented before. The GeoNode functionality is integrated into the Typo3 frontend interfacing the REST API of GeoNode in a similar way as the CKAN backend is interfaced.



Fig. 4: Screenshot of Maps list view.

implemented.

the three CRC 806 web sites.

The publication database also uses **CKAN** as the data backend, similar to the Data Catalogue interface. A publication record is stored as a CKAN datasets, the dataset can have resources like links to external publisher websites or the PDF file of the article and any other supplementary data. Extension were developed for the sfb806.de **Joomla!** CMS and the sfb806irtg.uni-koeln.de **Wordpress** CMS, to directly access the bibliography resources from the CKAN instance.

New Data Catalogue

The new data catalogue interface, implemented in Extbase & Fluid technology, is not only more robust (no rendering issues), but has also many new features. The major new feature is the **temporal filter**. The new interface allows to filter for data with temporal inforamtion, by a point in time or by an intervall.



The layers are displayed in a list view interface, and can be filtered among categories and keywords, as well queried by its spatial extend and by full-text search.



Fig. 7: Screenshot of desktop GIS accessing data from the CRC 806 GeoNode based SDI.

Results & Discussion

The presented redesign of the CRC806-Database frontend did not affect the underlying CKAN based data catalog and the AFS based long-term storage for the data files. Furthermore, it was taken care of preserving all URLs of dataset landing pages. The approach of replacing all AngularJS functionality with Extbase & Fluid Typo3v6 technology, resulted in more robust and flexible capabilities of the system at the same time. The integration is tighter, because we could abstain a complete layer of complexity and possible failure, by building all Model View Controller (MVC) functionality directly in Typo3 Extbase & Fluid. An other advantage are the better development capabilities, like control of the HTML DOM and a comprehensive library of available functionality, facilitated by the Extbase & Fluid framework. In conclusion, we can say that redesigning the web portal was and is worth the effort.



Fig. 5: Screenshot of Maps detail map view.



Fig. 6: Screenshot of Maps detail metadata view.

Fig. 8: Screenshots of the new data catalogue interface, list view (left), detail view (right).

References

Rau, J., Kurfürst, S., Helmich, M., (2013): Zukunftssichere TYPO3-Extensions mit Extbase und Fluid. O'Reilly Verlag.

Willmes, C., Kürner, D., Bareth, G., (2014): Building Research Data Management Infrastructure using Open Source Software. Transactions in GIS 18 (4), 496–509. issn: 1467-9671, doi: 10.1111/tgis.12060.





http://crc806db.uni-koeln.de/