

**Twenty-eight session  
28 April – 2 May 2014**

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**Item 9 of the Provisional Agenda**

**Activities relating to the Working Group on  
Toponymic Data Files and Gazetteers**

**Crowdsourcing and GIS-based Methods in a Field Name survey in  
Tyrol (Austria) \***

Submitted by Austria

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\* Prepared by Gerhard Rampl, University of Innsbruck, Institute of Language and Literature, department of Linguistics

## **Abstract**

Field-name-survey is an important but also time- and resource-consuming occupation. The project "*Field-name-survey in the Province of Tyrol (Austria)*" attempts to speed up and economize the survey by the use of WebGIS-based browser applications. The result is a crowdsourcing project that manages the problem of quality control by addressing a closed group of expert informants and giving only them access to the editing tool specially designed for this purpose.

To also include informants who are not familiar with computers the method was extended. The informants receive paper printouts of the maps which they use to mark the field-names. These maps get scanned, geo-referenced and then digitized with the same WebGIS application that is used for the survey.

## Introduction - why use WebGIS and crowdsourcing

The name survey is one of the crucial parts in the process of creating a field-name-gazetteer or a historical etymological field-name-lexicon: the main goal is to establish the exact position and reference of the name and its correct spelling in the regional language-variant. Only if this information is correct, field-name-maps can be created and further scientific conclusions can be drawn such as spatial distributional analysis of names, field walkings for the accuracy of the etymon and so on. Many authors describe the traditional name survey as a resource intensive operation. A lot of money is spent on staff that conducts the time consuming in-site interviews with local inhabitants to get all the necessary information. As a result it gets more and more difficult to get these kinds of projects funded.

Therefore in the project “*Field-name-survey in the Province of Tyrol (Austria)*” the use of Web-Geo-Information-Systems (WebGIS) and a crowdsourcing-approach were used to speed up and economize the survey process. The project, which started in 2009, is funded by the University of Innsbruck and the Dispatch Center Tirol. Whilst the former has a more scientific interest in the name survey the latter is interested in maps with exact and verified position and spelling of field-names to facilitate the dispatch of action forces (emergency medical service, fire brigades) in case of emergencies. The goal of the project is to collect all currently known and used field-names in the province of Tyrol (Austria), an alpine region that covers an area of 12.684 km<sup>2</sup> (4.897 sq mi).

## The crowdsourcing-approach in field-name-research

The possibilities of “*Web 2.0*” - a buzzword since its creation in 2005 - led to many new web-sites that predominantly or exclusively host user generated content. The content can have merely entertainment value but some of it is also used in scientific contexts (the annual *Christmas Bird Count (CBC)* can serve as an example as well as the more widely known *wikipedia*). The quality of the generated content is dependent on the expertise of the user. To ensure some kind of quality-control, two different approaches can be used: 1) crowd control like in *wikipedia* only works if a high participation of different users can be ensured and 2) access control to an expert group. In the field-name-project the latter strategy was taken up because the regional knowledge and participation of a big enough crowd could not be granted. In Tyrol there was the very fortunate start situation that the organization of regional chroniclers had a strong interest in participating in the project. So a WebApplication was created with user accounts for every chronicler and additional accounts for forestry and council workers willing to participate.

## The WebGIS application for the field-name-survey

The design of the web-based browser-application to support the field-name-survey was created under the preconditions that it could be easily used by non-professionals (in geography or onomastics). Therefore a user interface was designed that gives the contributor only a few options to enter information. The decision to use an areal view that serves as a base map for all entries was made after a series of tests that established which kind of maps (e.g. physical maps, contour maps) would be the most user-friendly. After starting the editing process, the user can place a point at the exact position. An attribute list pops up (fig. 1) and the user has the possibility to enter name, type of name, alternative variant(s) of name and additional remarks (often used to give additional information and verification, e.g. historical forms). The type of name has to be chosen from a list of 11 different name types (e. g. oronym (mountain name), hydronym (standing water), hydronym (running water), aulonym (name of a farm) and so forth).

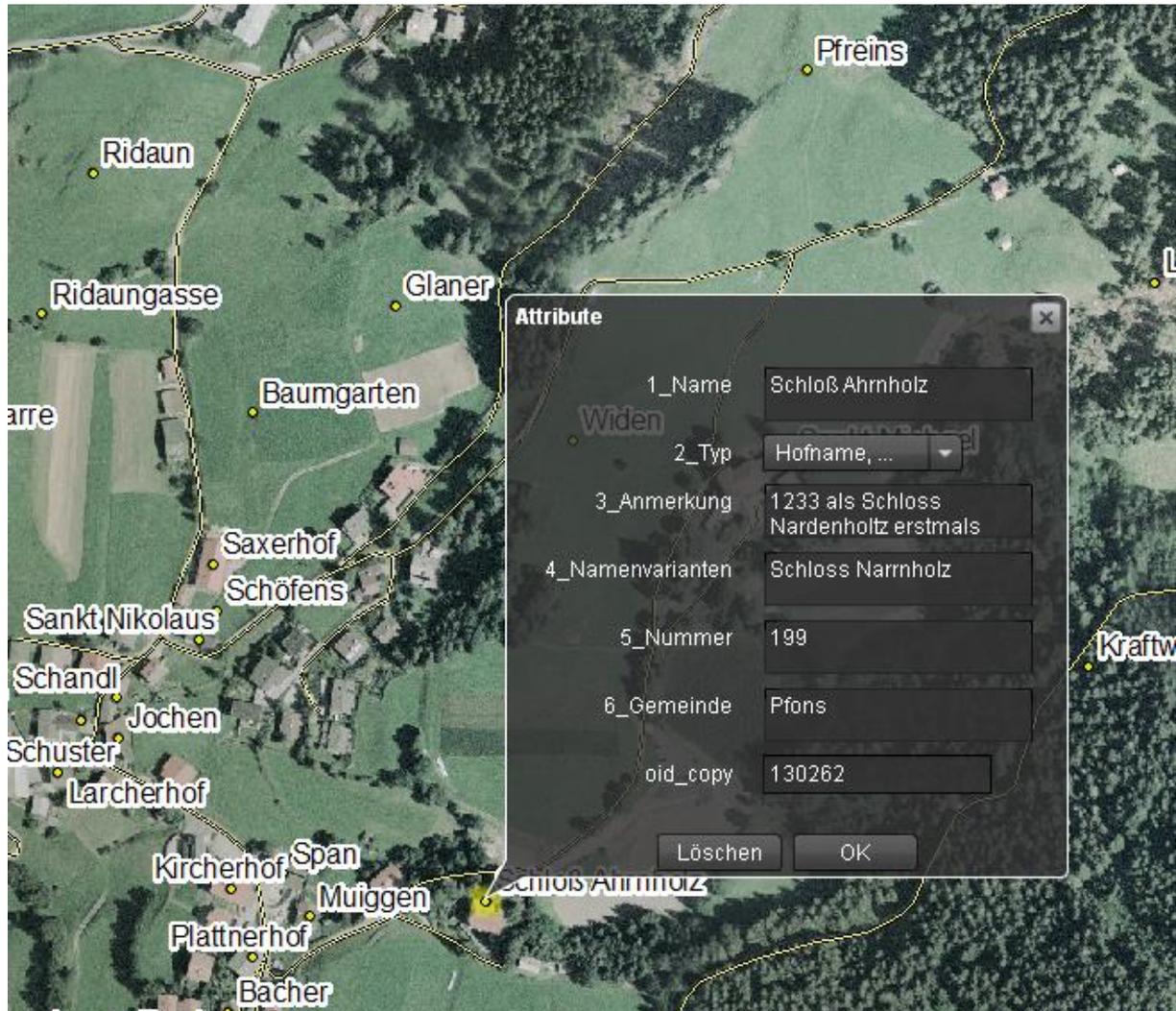


Fig. 1: User interface to create a name entry

## Expansion of the survey-methods

Though the WebGIS-application is easy to use, one of the concerns was, that the survey excluded people, who were willing to participate but not familiar with computers in general or the internet in particular.

As a result an additional survey method was established with the help of the regional government of the province of Tyrol. Paper printouts of the maps are handed out to participants. They mark the position of the names in the printout (fig. 2) with a corresponding field name list. These maps get scanned and geo-referenced by trained staff of the University of Innsbruck and then edited into the database with the same WebGIS-application that is used for the survey itself (fig. 4).

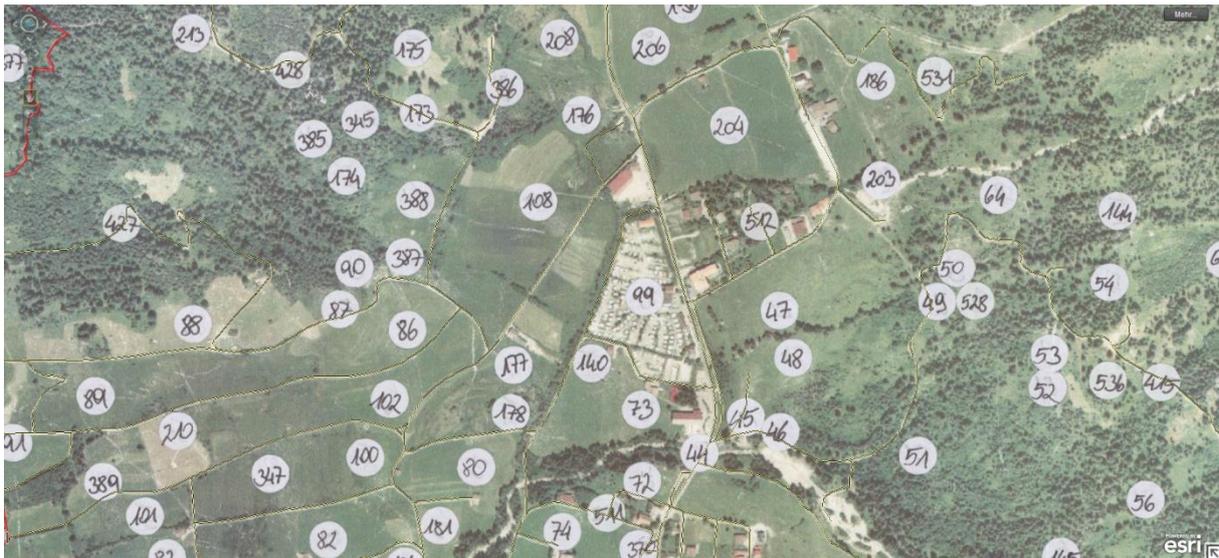


Fig. 2: Paper printout with designated field-name-points.

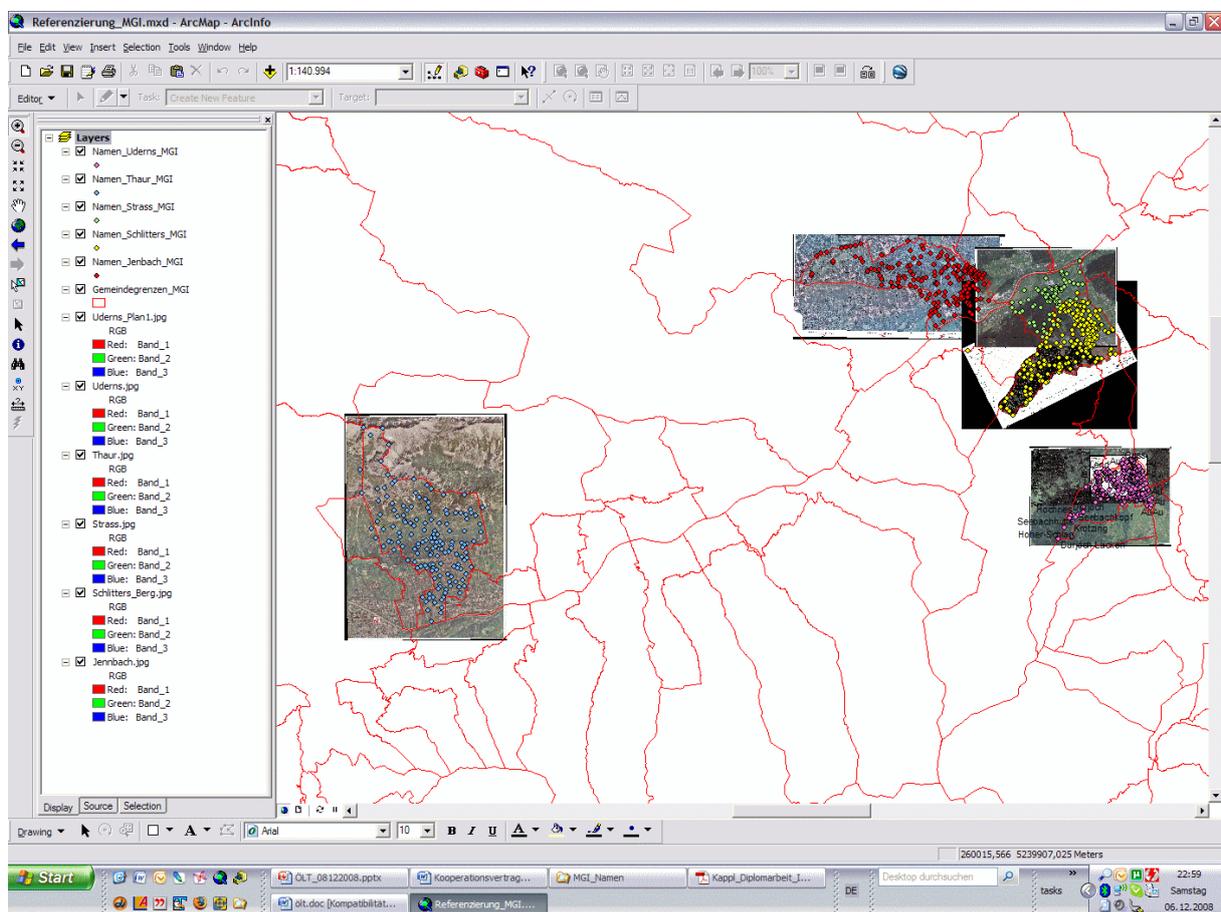
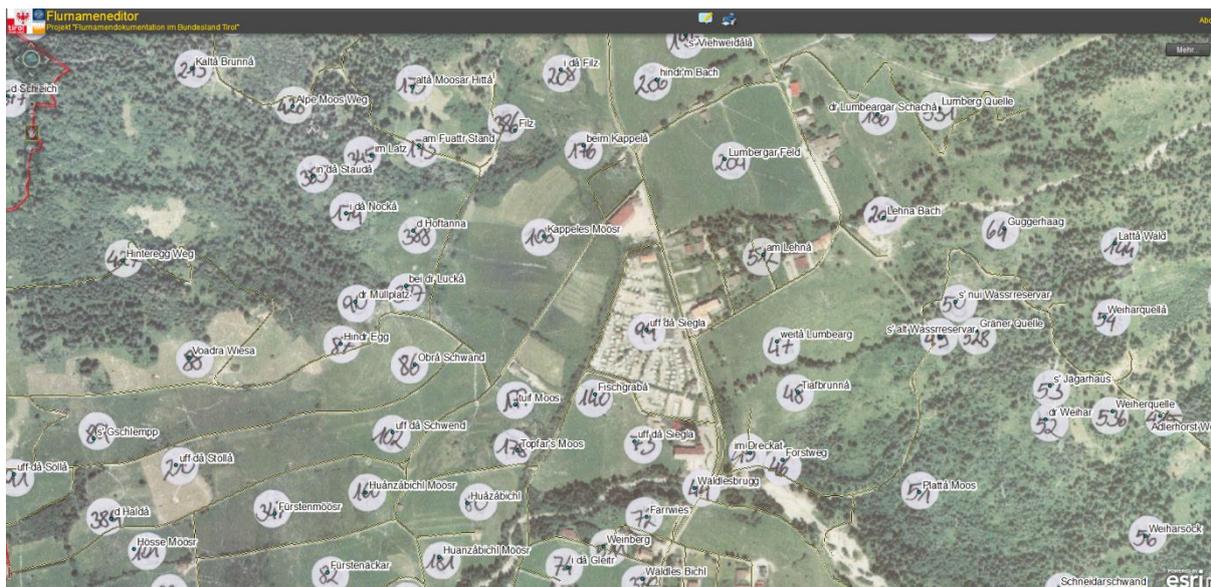


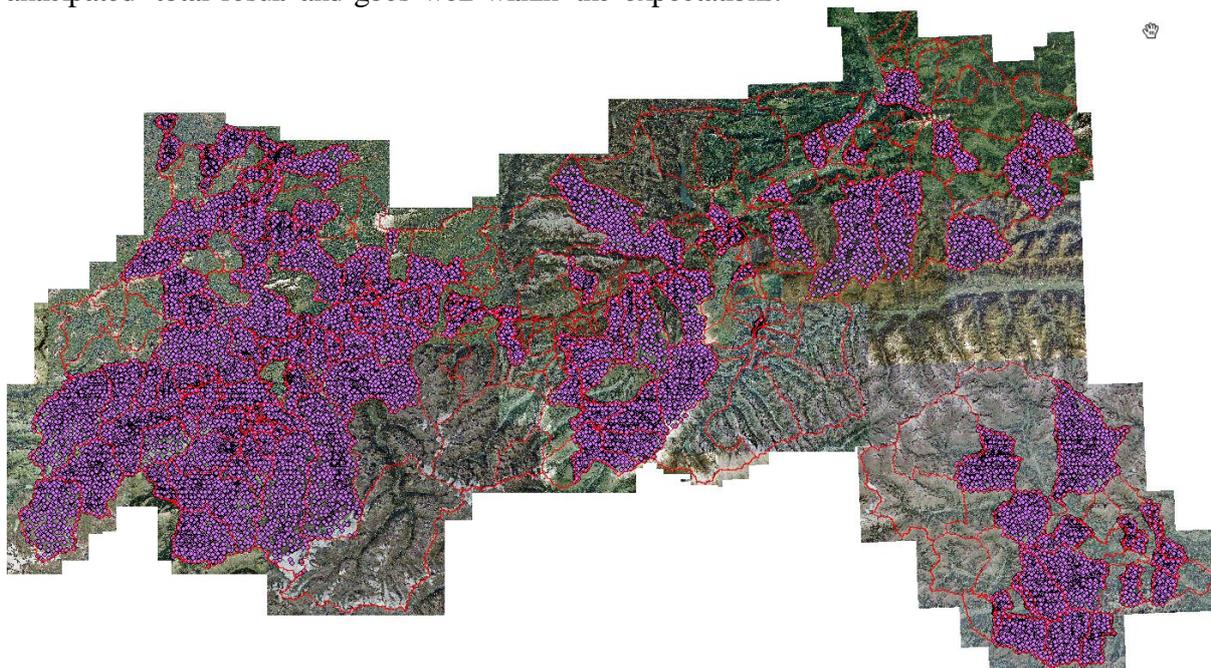
Fig. 3: Geo-referenced paper printouts



**Fig. 4: Digitalisation of the names with the WebGIS-application**

## First results and use in other projects

So far more than 60.000 field-names have been gathered (fig. 5). This is about half of the anticipated total result and goes well within the expectations.



**Fig. 5: First results of the field-name-survey**

The results of the survey have been used in other projects conducted at the University of Innsbruck. The most important are “WippDigital - GIS supported field name research in the Wipptal-area” and “The History of Mining Activities in the Tyrol and Adjacent Areas - Impact on Environment & Human Societies”, both funded by the Austrian Science Fund (FWF).

The project was funded and supported by following institutions:



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