

# Participation On The Wire

Internet based Participation in urban and regional planning in Germany

*Tilmann SCHULZE-WOLF*

(Dipl.-Ing. agr. Tilmann Schulze-Wolf, Ingenieurgesellschaft *entera*,  
Alte Herrenhäuser Str. 32, D-30419 Hannover, schuw@entera.de)

## 1 INTRODUCTION

The future role of participation processes by planning organizations will become significantly more important within the near future. European Union directives and according national legislation indicate a dramatic increase in public participation, e.g. the directive on public participation or the the water framework directive.

Two distinctive methods are used for the participation procedures in general: On the one hand there is the discussion orientated type of informal participation. This serves to capture public interests and wishes as well as their creativity in the run-up to the planning process. This occurs most generally with small-area planning projects which have a direct influence on the living environment of the citizens. Usually this type of participation is moderated and allow a full exchange of opinions between all involved parties.

On the other hand there are so called formal planning participations in use which occur with large-scale planning projects (such as road network, airport construction, regional planning schemes etc). In contrary to the discussion platform mentioned above the role here is to communicate the objections, concerns and suggestions regarding a project between individuals (or stakeholders) and the planning authority. As a rule, a general, open discussion does not take place here and it is a more or less one-to-one communication. Very often the results of this participations are verified by jurisdiction. In comparison to the discursive proceedings, extensive planning documents must be presented in a more or less standardized form giving an opportunity to the involved parties to view and comment upon them.

This type of formal participation procedures is the subject-matter of this paper.

## 2 INTERNETBASED PARTICIPATION

Planners and politicians agree that due to huge personnel and material cut-backs in the public sector, future participation projects can only be efficiently carried out through massive utilisation of the internet. As a result of the increased availability of PCs and the internet in the public and private sector, the communication possibilities and habits of the population have changed. These transformations in communication technology must be recognised and acted upon by authorities in order to prevent a situation of communicative isolation.

For the conveyance of views and considerations regarding planning processes over the internet, there are only a few comprehensive and tested methods available.

### 2.1 Participation-phases

There are basically three identifiable phases to a participation process.

- Presentation of the planning documents,
- Communication between the authorities and the parties involved,
- (authority) internal assessment process

The objective of an internet based participation procedure is therefore, to reproduce all three phases of the participation process on the internet in such a way as to create advantages for the authorities as well as the participants.

From the existing internet participation schemes, only partial stages of the whole process have been covered. This creates difficulties due to the exchange of information in various media types. This served to restrain the overall acceptance and understanding of the innovative potential of this method. Also the use of emails as a central communication channel has been increasingly impaired through internet viruses, worms and spam-mail, so that desired mails are sorted out through restrictive filtering of mail servers. Finally unencrypted email communication presents a security risk which has to be secured. This can only be achieved by an extensive replacement of email through an internet protocol independent form of communication.

### 2.2 Technical Implementation

The implementation of a formal participation scheme over the internet is particularly suitable to make politics and administration transparent. On the other hand there are increased requirements placed on the technical implementation of internet based participation procedures because of the diverse technical requirements of three different phases described earlier.

In order to achieve a uniform communication medium, the following aspects must be integrated into the participation process:

- Online presentation of large-format and well readable (high resolution) cartographic material
- Online presentation of comprehensive written material

- Creation of objections regarding individual text passages whilst maintaining the context in which it was written
- Creation of graphical objections from cartographic material whilst maintaining the original context
- User friendliness
- Low hard- and software requirements
- Accurate assignment of objections and participants as the basis of communication
- Secure transfer of objections
- Databased administration and editing of the objections
- Flexibility to adapt to the different types of planning processes
- Lowest possible costs

### 3 'PARTICIPATION-ONLINE'

The first internet based participation project which was capable to meet the above mentioned requirements was developed and tested as part of a research and development project in Hannover, Germany. This was carried out in 2003 as a cooperation between the consultant and service company *entera* (Ingenieurgesellschaft *entera*) and the University of Hannover. Within this project the three phases of a participation procedure were established in a uniform, continuous system exclusively available on the internet.

The base modules of the original system were meanwhile developed further and improved to enable implementation in other arbitrary participation procedures. The system is now in operation in many projects under the name of 'Participation-Online' ('Beteiligung-Online' in German).

#### 3.1 The Concept

The concept of 'Participation-Online' combines several innovative approaches. It is totally operational over the internet; it offers database support; it allows textual as well as graphical objections in the original planning documents and maps; and is constructed mainly upon open source software components. Moreover, since the internet-server meets the performance requirements of the system, the requirements of the user consist merely of an internet browser and no other hard- or software.

##### 3.1.1 Internet

All three phases of the process run exclusively over the internet. Therefore there are no alterations between online and offline working periods, no redundant data storage and no necessity for one or more changes of medium.

##### 3.1.2 Graphical objections

Unlike other participation projects, not only textual communication is enabled but also graphical objections within the original cartographic image are possible. This occurs through a java-applet which the user can use over the internet. The advantages of this are obvious: that the drawings will always have an exact spatial reference, they will be exceptionally precise and readable, and make detailed descriptions of spatial reference unnecessary such as 'right over the motorway' or 'behind the forest'. Due to the fact that the graphical statements are geo-referenced, they can be used later on as a digital basis within a geo-information system in order to edit the specific geo-data.

##### 3.1.3 The Database

To be able to overcome the above mentioned disadvantages of email communication, a database application was developed which is situated on an internet server. All objections are directly written into the database without using the internet protocol (e.g. email). Additionally the transmission of sensitive data (e.g. passwords) is encrypted (SSL). The core application is the so called participation database. It consists of two strictly separated password protected areas: The working area of the authority (or the project carrier) and the different personal areas of the individual participants. This password protected areas will be created for every person or institution that is involved in the process and is only accessible by that person. It is here that all the comments and objections are created, collected, edited, and finally 'sent' to the project carrier. In the process of sending material to the project carrier, the data from the personal area is simply transferred to the processing area of the project carrier in the same database. For every single objection, a specimen copy remains in the personal area of the sender, which of course either can be saved locally onto a hard drive or printed out. Through the utilization of the original reference material (text and maps) to create the objections, the context of the dispatched statements is always present and applicable.

##### 3.1.4 Assessment Tool

The authority assessment procedure is performed in the same internet database which is used by the participants. Thus the objections have to be typed in only once and this is done by the objectors themselves.

Through the authentication procedure prior to the creation of objections, all records on the database are automatically assigned to the corresponding individual or institution. Objections which were sent by mail also can be easily integrated into the participation system by an analog input interface. Thus, all statements from the participants, sent by whichever method in whatever form, can be entered and processed within the same system.

With the help of different database tools, all objections on the database are directly accessible. An easy to use but yet powerful query editor allows to retrieve a single objection out of thousands as well as a group of objections with

common decisive factors. Objections can of course be sorted and ordered by different criteria. Finally the objections (single, group, all) can be printed out in a standardized tabular form (synopsis) or any other predefined layout scheme. An integrated workflow management tool allows to manage and control the process of the assessment. Thus its very simple to keep trace of the status of a single objection as well as of the whole procedure. All these different tools facilitate the time consuming assessment process which has to be carried out by the authority or the project carrier. As these tools decrease the necessary amount of time considerably the overall duration of a participation procedure will be reduced significantly. Especially important or large projects will gain economic advantages from this shortening of processing times.

### 3.2 Building blocks of 'Participation-Online'

'Participation-Online' is not a 'out-of-the-box' product, but rather a complex integration of many different building blocks, mainly adapted OpenSource software products. The most important system components are mentioned below. The mapping interface is constructed through MapBender. The participation database and all other database functions are controlled by the high performance database management system MySQL. In place of MySQL other databases could be used if requested including PostgreSQL. PHP is the Scripting language and as a servlet engine Tomcat is in use.

The so-called participation modules are a new developments by *entera* which provide the complex functions for the online participation. All system components are connected through system links which can be individually tailored according to the needs of the project carrier. Due to the accessibility of each components program code, Online-Participation offers therefore an extreme degree of flexibility. 'Participation-Online' is designed for a Linux environment as well as for Windows based OS. Therefore it is capable of cooperating with commercial software components like ArcIMS (by ESRI) or Oracle as a DBMS instead of the above mentioned OpenSource products. Of course 'Participation-Online' is fully compatible with the OGC standards.

### 3.3 Deployment

Due to the number of different components which need to be installed, set-up and maintained, 'Participation-Online' is primarily used as application service providing (ASP). That means that the administration, security, backup, monitoring and employment of a powerful and specifically layed out internet server with the complete and, on request, individually adapted software components lies completely within the responsibility of *entera*. It will be on lease only for the period of time in which 'Participation-Online' is being used for a participation procedure. This method of operation results in savings of cost and time because there is no requirement for hard- and software purchase, installation, maintenance, support, backup procedures etc.

## 4 EXPERIENCES

The result of the above mentioned R&D project was a software which was tailored for a landscape planning project but not ready to be used for arbitrary participation projects. The source code therefore had to be revised, features needed altered or added and the setup of the whole system was changed to give it the flexibility which is necessary to be adaptable to requirements of other participation projects. Finally 'Participation-Online' was released for the first time in Summer 2004. It was then utilized in numerous participation projects in association with diverse types of planning schemes. Based on the experiences gathered with these projects 'Participation-Online' was improved and more features added. The actual version 2.0 of 'Participation-Online' was released in fall 2005 and an English version followed in February 2006. A complete demo version is available for testing purposes under [http://entera-online.com/009\\_demoprojekt/](http://entera-online.com/009_demoprojekt/).

A few example projects which are or will be realized with 'Participation-Online' are given consecutively.

### 4.1 Landscape Framework Plan

The first project to be realized with 'Participation-Online' was a landscape framework plan for the administrative district of Diepholz (Landschaftsrahmenplan Landkreis Diepholz, [www.diepholz.de](http://www.diepholz.de)) in summer 2004. This framework needed 30 maps (scale 1:50.000 and 1: 200.000) covering about 2.000 km<sup>2</sup> and roughly 450 pages of describing texts to be displayed for the participants. In addition 40 thematic layers were provided for downloading.

### 4.2 Open Landscape Development Concept

An open landscape development concept for the conurbation (5.400 km<sup>2</sup>) of Braunschweig was released in summer 2004. This concept was a predecessor of the regional regional planning programme which is following in spring 2006. The concept comprised 18 thematic layers, 3 additional maps and about 60 describing texts which were directly linked to open landscape areas. The Zweckverband received more than 1.000 objections the open landscape development concept and made the assessment completely with 'Participation-Online' (Freiraumkonzept des Zweckverbands Großraum Braunschweig, [www.zgb.de](http://www.zgb.de)).

### **4.3 Motorway Development**

In December 2004 an internetportal for the planned A22 Coastal Motorway (Küstenautobahn A22) was developed by *entera* and released by the State Office of Lower Saxony for Road Construction and Traffic. The purpose of this portal is to provide comprehensive information about the planned motorway at any stage of development and construction. At this early stage of planning 'Participation-Online' is used to communicate results of advisory reports and results between the involved authorities and to facilitate the exchange of opinions and questions. Later (probably in 2007) the official formal participation procedure will be carried out with 'Participation-Online'. The total volume of the material to be released is not known yet precisely but it will be about 300 maps and 2.000 pages. As this motorway is very controversial 5.000 - 10.000 objections are expected (Internetportal und Beteiligungsverfahren zur Küstenautobahn A22, [www.kuestenautobahn.org](http://www.kuestenautobahn.org)).

### **4.4 Urban and Regional Planning Scheme**

In spring 2006 a re-compilation of the urban and regional planning scheme will be released by the State Ministry of Agriculture and Rural Development of Lower Saxony. This planning scheme will be given into public participation with the aid of 'Participation-Online'. At least 10.000 objections are expected. (eGovernment Pilotprojekt LROP-online: Niedersächsisches Landesraumordnungsprogramm 2005, [www.niedersachsen.de](http://www.niedersachsen.de));