

**ECP 2005 GEO 038026 EGN**

## **EuroGeoNames**

### **Test Implementation Analysis**

|                                |  |
|--------------------------------|--|
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<sup>1</sup> OJ L 79, 24.3.2005, p. 1.



### 1 Executive Summary

The Description of Work has foreseen a Test Phase for the EuroGeoNames Project. The task of WP9 is to prepare and conduct testing and finally report the outcomes and give feedback to the developers of the EGN Central Service and the EGN Reference Application. The deliverable D9.3 is a summary of these results.

Due to several reasons this test phase was carried out later than and the number of involved testers was smaller than originally planned. The main tool for the Test Phase was the questionnaire. Additional valuable information came directly via email from persons testing the Reference Application.

The outcome of the Test Phase was that the aims of the projects are in general accomplished. This can definitely be stated for the functionality of the Reference Application, the Conceptual Data Model and the data itself. There was however some need to have faster query results. In between the situation has been improved by application programmers.

A further need is to increase the number of connected nations to the EGN infrastructure. Experience and the feedback have shown that implementation requires hard work to be done but is altogether viable.

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## 2 Introduction

### 2.1 Objectives of WP9 and D9.3

As defined in D9.1 the objective of WP9 is to test, evaluate and assess the EGN Web Service and Reference Application. The task of D9.1 was to set up a plan for this process.

Within D9.2 the means for feedback supported testing are provided and documented.

D9.3 comprises the result of the testing phase and shows in which degree the user requirements have been fulfilled and where there is still need for further improvement. This document also describes in how far feedback from users has been considered in the development process.

### 2.2 Change summary

| Version | Date       | Author                                       | Notes         |
|---------|------------|--|---------------|
| 0.1     | 26/02/2009 | Walter Wurzer                                | Initial draft |
| 0.2     | 02/03/2009 | Sabine Afflerbach,<br>Pier-Giorgio Zaccheddu | Comments      |

### 2.3 Related Documents

| Title  | Author                         | Date       | Version |
|--|--------------------------------|------------|---------|
| /1/ Web Services requirement documentation   | Anne Blankert,<br>Frans Knibbe | 31/05/2007 | D6.1    |
| /2/ User Test Plan   | Walter Wurzer                  | 31/08/2007 | D9.1    |
| /3/ Analysis of the "state of the art": Issues for implementing the EGN infrastructure | BKG , Geodan, ESRI             | 30/11/2007 | D11.1   |
| /4/ User Testing Component.doc   | Walter Wurzer                  | 27/02/2008 | D9.2    |

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## 3 Premises

### 3.1 Content of the Questionnaire

The main tool for the Test Phase was the questionnaire, which was composed in January 2008 and adapted in summer 2008 in order to match the current state of development and the changed plan. It was decided to send out only one questionnaire, then adjusted to a restricted user group.

The major focus of the questionnaire was put on the evaluation of the Reference Application. Some questions indirectly depend on the Central Service or rather on the whole service architecture. Other questions are concerned with data content and data quality.

A detailed list of the question and the results can be found in the Annex.

### 3.2 Testing Period

Originally the test phase should begin in mid 2008. Because of delays in getting local web services connected testing had to begin later, yet still at a time, when the results could still be considered during the project.

The questionnaire was made available via link from the Reference Application. The request for testing was sent out on November 17<sup>th</sup>, 2008 via email. The testing period lasted until December 10<sup>th</sup>, 2008.

The addressees were the Reference group members and the Consortium. The number of respondents was 15, on average 9 respondents from 8 organisations gave complete answers.

The reason for restricting the testing to the Reference group and the Consortium was that the development was not in the final stage and only four countries were connected in the beginning, so it would have been too early to present the EGN infrastructure to a wider group.

Additional feedback was received by email. Some respondents sent very detailed comments. Contact persons from the Consortium responded to questions and proposals.

The ArcGIS extension – which was successfully presented at the Closing workshop in February 2009 in Brussels – was not tested. In addition, some functionalities of the Reference Application had not yet been implemented in the final form (e.g. sounds-like and fuzzy searching) and were also not part of the testing.

### 4 Outcome

Generally the Reference Application made an excellent impression, as it could be seen from emails and discussion.

Concrete proposals and requests were also mostly related with the Reference Application. The changes in the Central Service were not related with the feedback of the test phase.

Most comments were related with the functionality and the display of results in the Reference Application. Which content and how much items the result list of a query should contain was matter of discussion several times in the project and also commented here.

Some examples would be:

- A "Please wait" button should be displayed while the request is running
- Exonyms should be listed directly under endonyms
- Status attribute should be added

Additionally the test phase helped in finding errors which then could be eliminated, e.g. the erroneous interpretation of some diacritics.

In the following the topics of the test phase will be addressed separately.

#### **Access**

In general the service could be accessed by all respondents. Yet a 100% time availability of the service was not achieved at the testing period.

Lost connections and program errors have been detected likewise. Compatibility problems with Mozilla and Internet Explorer have occurred and could be settled after intense browser compatibility testing by the Consortium partner GeoTask.

#### **Response time**

Response time also reflects the Central Service, which at that time was not yet running as a distributed system.

Response time is experienced to be very dependent on the type of query. Complex queries and big result lists can be time consuming. This explains why users had different views on whether the response time was appropriate. Queries can take less than 3 seconds but also significantly more than 20 seconds.

This outcome led to discussions how to reduce response times. In the meantime the Reference Application produces much faster visual results because the EuroRegionalMap,

which serves as a visual background, is not provided anymore by a WMS but is loaded in a tiled format using functionality of ArcGIS 9.3.

Much progress has been made in optimising the queries and processing of result lists in a more efficient way. Still further improvements are thinkable.

### **Language and presentation of results**

At the time of the survey three languages were available (Latvian, English and German). The graphical user interface of the Reference Application was rated very positively. The query results were generally felt to be understandable and correct. After a harmonised translation of enumerations and code-lists the multilingual aspect of the Reference Application was further improved. By the end of the EU-funded period ten languages (Latvian, English, German, French, Spanish, Catalan, Greek, Dutch, Slovenian and Lithuanian) are supported. This will be extended according to the provision of translation files by the respective language communities.

### **Data**

The number of connected countries during the Test Phase was five. It started with The Netherlands, Germany, Latvia and Norway. Later Slovenia joined. From the viewpoint of the project this was a success for the testing phase, the test users might be less satisfied.

Completeness of data was judged more positively. A majority of respondents was satisfied also with the feature classification. It should also be stated that lots of effort was put in this topic.

In general the testers were very satisfied with location information (currently point-features). However, it was stated in discussions by application developers, that meaningful bounding boxes are very important for the correct zooming in applications and hence also contribute to data quality.

Number and selection of attributes were mostly considered as appropriate. The display of attributes has been discussed several times. For instance the status attribute has been added according to several proposals.

### **Service level**

The service level was subdivided into different categories (see Appendix, question 9). Generally the service level was considered to be sufficient by the majority of respondents. As for the exonyms and variant names it has to be considered that the database was only partly filled or the names at that time and did not show up in the expected order. After the testing

phase the exonyms and variant names database has been populated with about 5.000 names.

A similar case was the display of parent and child features in the result list, which were not available in the connected databases at that time, so the impression was that it didn't work.

Summing up it can be stated that the Reference Application demonstrates sufficiently and clearly the objectives and the functions of the EGN Central Service.

Fuzzy search and use of wildcard does not bring expected results in all cases and will be improved in future.

### **Implementation**

There are two options to set up a local service. One is to use the standard interface software version provided by Geodan, the other one is the development provided by the NMCAs themselves. Even when using the version of Geodan one has to expect some specific labour effort for setting up the service.

Installation was not regarded as a major security risk for the existing infrastructure. So concerns in this direction may have caused a delay but have not hindered the general process.

Difficulties in implementing the service have been e.g. the installation of additional software or hardware because technical resources are already available in most organisations.

Transforming the data to the EGN standard was definitely identified as a challenge. First it is difficult to understand a relatively new data model and then it can be difficult to map the local feature classification to the EGN Conceptual Schema.

Developing the service is probably even more demanding. Although the Installation guide and files provided by WP6 are clearly applicable the problem might be to find technical skilled persons with some experience in setting up web services. In general an organisation has only few of them and these are very busy.

## **5 Conclusion**

Although the testing phase was short and limited to a small group of testers, it nevertheless can be considered positively as it showed the main bottlenecks and had practical impacts on the further development of the Reference Application.

## 6 Annex: Results of the Questionnaire

### 1. Was the service available when you tried it?

|  | Responses                         |
|--|-----------------------------------|
| Yes  | 9                                 |
| No   | 0                                 |
| Estimation of availability (0 – 100%) in the testing period: | 100% (2x)<br>90% (1x)<br>50% (2x) |

### 2. Did it work without problems?

|             | Responses |
|-------------|-----------|
| Yes         | 5         |
| With errors | 3         |
| Not at all  | 2         |

### 3. If you experienced problems please note them:

|   | Responses   |
|---|---|
| General access problems (i.e. due to the fact that Javascript is required)                        | 0   |
| Occasional access problems  | 3   |
| Lost connections  | 1   |
| Program errors  | 2   |
| Browser or other software incompatibility (please specify the browser in the comment field below) | Internet Explorer 6.0. (2x)<br>Mozilla FireFox (2x) |
| Other (please add a comment below)  | Stop-Button missing (1x)                            |

### 4. How fast was the average response?

|               | Responses |
|---------------|-----------|
| < 3 second    | 1         |
| 3-10 seconds  | 2         |
| 10-20 seconds | 4         |
| > 20 seconds  | 2         |

### 5. Do you think the response time was acceptable

|            | Responses |
|------------|-----------|
| Yes        | 2         |
| Acceptable | 2         |
| No         | 4         |

## 6. Which language were you using?

|         | Responses |
|---------|-----------|
| English | 8*        |

\*Only 3 languages were available at the time of the survey

## 7. Considering language would you agree that the service provides understandable and correct answers?

|     | Responses |
|-----|-----------|
| Yes | 6         |
| No  | 1         |

## 8. How would you rate the quality of the data according to the following criteria?

|                                      | Very high | Appropriate | Low |
|--------------------------------------|-----------|-------------|-----|
| Covered area (nations)               | 0         | 5           | 3   |
| Completeness (data of covered areas) | 2         | 5           | 1   |
| Feature Classification               | 5         | 1           | 2   |
| Location Information                 | 5         | 2           | 1   |
| Attributes                           | 0         | 6           | 2   |

## 9. Would you say that the EuroGeoNames Service and Application provide sufficient service level in the following areas?

|  | Sufficient | Improvable | Insufficient |
|--|------------|------------|--------------|
| Search specific feature classes                    | 4          | 0          | 3            |
| Use and return of historical names                 | 0          | 6          | 1            |
| Use of variant names                               | 1          | 2          | 4            |
| Fuzzy searching                                    | 5          | 2          | 0            |
| Use of wildcard characters                         | 3          | 2          | 2            |
| Make query from query results                      | 5          | 1          | 1            |
| Limit search results                               | 5          | 1          | 1            |
| Attributes on default result list                  | 5          | 1          | 1            |
| Display of result details                          | 6          | 1          | 0            |
| Speed of query response and speed of mapping       | 4          | 3          | 0            |
| Presentation of location                           | 3          | 2          | 2            |
| Map display (illustration of geographical context) | 4          | 1          | 2            |
| Number   | 2          | 3          | 2            |
| Gender   | 2          | 3          | 2            |
| Link to Metadata Service                           | 3          | 3          | 1            |

**10. Which of the following functions do you think would be important to add to the current application:**

|                       | High | Medium | Low |
|-----------------------|------|--------|-----|
| Soundex searching     | 1    | 1      | 5   |
| Spatial relationships | 4    | 3      |     |

**11. Does the Reference Application demonstrate sufficiently and clearly the objectives and the functions of the EGN Central Service?**

|           | Responses  |
|-----------|--|
| Yes       | 7  |
| No        | 1  |
| Statement | Linkage between several official endonyms; search for specific feature classes features is not working |

**12. Are you implementing an EGN Web Service? If so which of the following applies?**

|                                      | Responses |
|--------------------------------------|-----------|
| Standard version developed by Geodan | 1         |
| Own development                      | 3         |
| Implementation not yet started       | 2         |

**13. In your view does the EGN Web Service create any additional security threats for your internal data and systems?**

|                                     | Responses |
|-------------------------------------|-----------|
| No                                  | 4         |
| The risk is calculable              | 2         |
| The risk is significant             | 0         |
| What kind of risk can you identify? |           |

**14. Would you consider using the service for purposes other than EuroGeoNames? (e.g. a custom gazetteer service)**

|  | Responses  |
|--|--|
| No   | 2  |
| Yes  | 5  |
| If "Yes" what type of application do you think of? | For applications related with geographic information |

**15. What degree of effort was associated with the implementation of the EuroGeoNames Infrastructure?**

### D9.3 Test Implementation Analysis



|   | No effort   | Little effort | Considerable effort |
|---|-------------|---------------|---------------------|
| Additional hardware/software  | 2           | 1             | 1                   |
| Transform data  |             | 2             | 2                   |
| Develop the service   |             |               | 4                   |
| Get the service to work   | 0           | 2             | 2                   |
|   | Answers     |               |                     |
| Can you estimate in working days the time needed for implementation of the Local Service? | No answers. |               |                     |