

EuroGeoNames project: Definition of the term "single inquiry"

Prerequisites

The proposed definition of the term "single inquiry" has evolved from the explanations given in the Description of Work [1], the deliverable D6.1 [2] and discussions at the Consortium meeting in Vienna [3].

Overview of terms

In the Description of Work (DoW) the terms "inquiry" and "single inquiry" are used. This document describes these terms more thoroughly in the context of EGN.

Inquiry

An inquiry consists of a single request to the EGN system and the resulting response to the request. The description of these requests and responses are available in the Annex of this document, taken from the EGN Document "deliverable D6.1 – Web Services requirements documentation, Service-Input-Output description"

Single Inquiry

The term "single inquiry" is introduced in the DoW to distinguish occasional free inquiries from frequent commercial inquiries. Single inquiries are available to every user on the internet and are free of charge.

Single Inquiries differ from "Other Inquiries" as follows:

- a) free of charge
- b) accessible to every internet user
- c) one human user is allowed one single inquiry per period of time. This period of time has yet to be established (Decision: 50 requests will be allowed per day).
- d) the resulting response will contain a maximum number of elements (*locationInstances*). This maximum number has yet to be established (Decision: 25 elements).
- e) is the only supported type of inquiry (from the outside) by the EGN services infrastructure in the first 30 months. Of course, internal **tests** must confirm that "other inquiries" can be handled by the Central Service, too. EGN also considers to supply a test-bed version of the EGN system. This version will not have these limitations.

How EGN distinguishes "single inquiries" from other inquiries

The purpose of defining single inquiries in the DOW is to allow free occasional access to EGN services as described above. To distinguish such use from other use, EGN proposes to put the following measures in place for single inquiries:

1. the EGN system limits the number of requests per user in a given time period, for instance maximum 50 requests per day (24 hours).
2. the EGN system limits the maximum number of returned elements per request, for instance a maximum of 25 elements (*locationInstances*)
3. the EGN system splits large results that contain many elements into chunks. Every chunk is called a page. EGN allows access to the first page of information only.
4. the EGN system does not provide access to full geometries. Only coordinates and minimum bounding rectangles are returned.
5. the EGN system distinguishes between inquiries for lists of possible elements and inquiries for details of a single element.

It is not yet known exactly how one user will be distinguished from another user. The details of how to achieve this are beyond the scope of this document. The Conterra Security Manager will be used for that purpose.

Examples

Example for limitation 1, "limiting the number of requests per user in a given time period"

Let's assume that the EGN system is configured to allow 50 requests per day.

Now we have a first time user that sends 40 requests to the server on Monday between 13:00 and 14:00.

All requests are allowed. Tuesday at 12:00, 23 hours later, the same user wants to use the EGN system again. This time the 11th request fails because the request is the 51st request in the last 24 hours.

Now our user retries at 15:00. The user will now find that he is able to do 40 more requests, because the requests of the previous day between 13:00 and 14:00 are no longer counted.

Due to implementation constraints the EGN system may choose another number of requests and time period as decided at the 5th EGN workshop of the Consortium and the Reference Group, 15 November 2007.

Example for limitation 2 and 3, "limiting the maximum number of returned elements per request, first page only"

Let's assume that the EGN system is configured to allow a maximum of 25 elements per request to be returned.

A user wants a list of all populated places known to EGN in Bavaria. One approach could be to first get the geographic identifier for the administrative unit of Bavaria (request 1). This results in a response containing a single element representing Bavaria. The geographic identifier from this single element is used for a second request: return all populated places inside the element that is represented by the geographic identifier returned from the previous request.

Now the EGN system looks for all populated places inside Bavaria and may find there are more than 25 of such places. Now the EGN system selects a set of 25 places from the larger set using some ordering mechanism. The user will see a response that contains only these 25 places. The API has the possibility to send another request to get the next set (*page*) of 25 places beyond the first set. However, our user is prevented from doing this, because he is limited by the rules for a single inquiry.

Example for limitation 4, "no access to geometries"

A user wants to know the shape of Bavaria. He decides to send a full attribute request to the EGN system in order to get the coordinates that describe the polygon for the administrative unit of Bavaria. On inspection of the full response, the user will discover that it only contains the coordinate for a point inside Bavaria and the coordinates that describe the minimum bounding rectangle for Bavaria. The coordinates for the polygon are not available.

Example for limitation 5, "distinction between level of detail of elements in a list and single elements"

A user searches for the term "Erlenbach". The response to this request contains many elements from Germany and may also contain elements from other countries. There will be elements of type "populated places", "streams", "administrative units" or other types of element. If the user looks at the available attributes for these elements he will find only a limited set. Now the user wants to have all information that is available in EGN about one of the Erlenbach's results. The user has to send a new request using the geographic identifier of that instance of Erlenbach. This time the user will get access to all the available attributes for that particular instance of Erlenbach.

Annex

[1] From 'Description of Work' (DoW), May 2006, Pages 17-18

Individual searches using the EGN Web Service will be free of charge. By signing the 'Declaration of Participation' the NMCAs gave the permission to "use their geographical names data free of charge for single inquiries in non-commercial applications". Selected lists or full gazetteers (e.g. European gazetteers or parts of it – all named mountains of Europe, all named rivers, all named rivers for a specific minority language area or region, etc.) will not be provided over the project lifetime.

However, a business model has to be developed (Work package 10) dealing with both the free-of-charge access for so-called individual/single inquiries and with asking fees for potential value-adding and commercial applications. Detailed definitions of these two categories will be established in the proposed project.

[2] From deliverable D6.1 – Web Services requirements documentation, Service-Input-Output description, May 2007, Pages 4-5

The service can be described by the specification of information that it needs (input) and information that is returned (output), as is done below.

Input (request)

Feature selection

1. *A search term (a string of Unicode characters) or a EGN feature ID.*
2. *Optional: A specification of how the term should be used (literal, fuzzy or 'sounds like').*
3. *Optional: A spatial operator (requires use of the EGN feature ID).*
4. *Optional: A specification of a set of feature classes.*
5. *Optional: A rectangle (two diagonally opposite ETRS89¹ co-ordinates).*

Output modification

1. *Optional: The desired language of the response (if not specified English will be used).*
2. *Optional: The set of desired feature attributes (if not specified, all available attributes will be returned).*
3. *Optional: A specification of geometry generalisation level (if not specified, the highest generalisation level will be used).*
4. *Optional: Result page number (if not specified, the first page will be returned) and maximum number of features per page (the default and maximum value is 50).*

Output (response)

A set of features that match the search criteria.

For each feature:

1. *The EGN (unique) feature ID.*
2. *The values of the selected attributes.*

Notes

1. *The EGN feature ID is an identifier that uniquely identifies a feature within the EGN system (It is currently foreseen that this ID may consist of multiple parts).*
2. *Except for name, feature class and rectangle, none of the feature attributes can be used in a query.*
3. *The service will not sort the output, this is left to the client application.*
4. *The optional page number and maximum number of features parameters enable the service to use output pagination. Pagination could be used to limit the data that can be gathered by free individual*

¹ The European Terrestrial Reference System 1989 (ETRS89) is the standard EU coordinate reference system.

searches. Although results will not be sorted, a request with a page number specification will always yield the same results (as long as the source data have not been changed).

5. *The output described above is not necessarily the information that will be presented in an end-user client application. Such an application may hide information or do some further processing.*
6. *Using EGN feature ID's in the query instead of a search for a name makes it possible to construct iterative searches: A first query can be built with a search term. This query returns a set of feature ID's. Those ID's can then be used for a second query.*

[3] Notes Pre-Consortium Meeting, Vienna, Common understanding in the EGN Consortium, Sep 2007

As for the 30 month funded period (Sep'06 to Feb'09 and for 3 years beyond), the following obligations towards the EC are fixed in the contract:

- *infrastructure connecting 5 - 10 countries (the EGN Consortium agreed with connecting all 15 NMCA's, if applicable and feasible)*
- *Reference Application (operable), Commercial Application (as example only)*
- *"single inquiries" as responses only, based on point coordinates or bounding boxes. It was agreed that the definition of "single inquiries" should define the limitation of the amount/content of the response (e.g. 50 hits displayed for one query)*
- *provision of results is "free of charge"*

As for the time beyond the funded period the following objectives for EGN are explained in the 'Description of Work' (DoW):

- *provision of single inquiries is expected to remain free of charge (added on 15.10.2007)*
- *infrastructure to be extended aiming at full European coverage*
- *Ref. Application (operable), several Commercial Applications possible²*
- *complex inquiries possible (e.g. query for all settlements, all rivers) or inquiries based on the provision of the full geometry of features if feasible (e.g. vector coordinates for lines like rivers instead of point coordinates for the mouth of the river only) will have to be agreed with the NMCA's first*
- *complex business model and related pricing model covering the objectives mentioned above will reflect the decision made with the NMCA's*

² Remark: To be able to fulfill this, a mechanism is to be defined and established that is able to discern between non-commercial single inquiries and commercial inquiries.