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**Datasheet for the decision  
of 31 July 2019**

**Case Number:** T 0544/13 - 3.5.06

**Application Number:** 02739540.9

**Publication Number:** 1402472

**IPC:** G06N5/02

**Language of the proceedings:** EN

**Title of invention:**

SYSTEM AND METHOD FOR GEOCODING DIVERSE ADDRESS FORMATS

**Applicant:**

Pitney Bowes Software Inc.

**Headword:**

Address geocoding/PITNEY BOWES

**Relevant legal provisions:**

EPC Art. 123(2)  
EPC 1973 Art. 56

**Keyword:**

Amendments - added subject-matter (no)  
Inventive step - (no)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
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Case Number: T 0544/13 - 3.5.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.06**  
**of 31 July 2019**

**Appellant:** Pitney Bowes Software Inc.  
(Applicant) One Global View,  
Troy, NY 12180 (US)

**Representative:** Gibbs, Richard  
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**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 22 August 2012  
refusing European patent application No.  
02739540.9 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairman** W. Sekretaruk  
**Members:** G. Zucka  
M. Müller

## **Summary of Facts and Submissions**

I. The appeal is against the decision by the examining division, dispatched with reasons on 22 August 2012, to refuse European patent application 02739540.9, on the basis that claim 1 of the main request contained additional subject-matter (Article 123(2) EPC) and the subject-matter of claim 1 of auxiliary requests 1 and 2 was not inventive (Article 56 EPC 1973), in view of the following document:

D1 = WO 96/34354 A

II. A notice of appeal was received on 1 November 2012, the appeal fee being paid on 31 October 2012. A statement of grounds of appeal was received on 28 December 2012.

III. The appellant requested that the decision under appeal be set aside and a patent granted on the basis of claims 1 to 5 of the main or first auxiliary request that were the object of the refusal, or on the basis of claims 1 to 3 of the second auxiliary request that was the object of the refusal, all re-filed with the grounds of appeal. The appellant made a conditional request for oral proceedings.

IV. The board issued a summons to oral proceedings. In an annex to the summons, the board set out its preliminary, negative opinion on the appeal.

V. In reply to the summons, the appellant announced that he would neither file any submissions nor attend the oral proceedings. The oral proceedings were subsequently cancelled.

VI. The appellant requests that the decision under appeal be set aside and a patent granted on the basis of claims 1 to 5 of a main or first auxiliary request, or claim 1 to 3 of a second auxiliary request, all filed with the grounds of appeal, and on the basis of description pages 1 to 31 and drawing sheets 1 to 9 as published.

VII. Independent claim 1 of the main request reads as follows:

"A geocoding engine for providing geocodes in response to receiving address information from a remote user, the geocoding engine comprising:

    a module for detecting a country code designation in a request to provide a geocode;

    a module for invoking a parser corresponding to the country code from the received request to provide a parsed input address;

    a module in the parser for detecting a postal-code corresponding to the country code in the received request;

    a module in the parser for detecting a world city name in the received request;

    a module for obtaining a candidate list selected from a geocoding database corresponding to at least one member of the set consisting of the postal-code, the parsed input address, and the world city name;

    a module for invoking a matcher module for evaluating the candidate list by matching it to the input address; and

    a module for invoking an interpolator corresponding to the country code for generating a geocode corresponding to a selected candidate."

VIII. Independent claim 1 of auxiliary request 1 is broader than that of the main request, in that it leaves out the limitations according to which the modules for detecting the postal code and the world city name are in the parser and the candidate list is selected from a geocoding database.

IX. Independent claim 1 of auxiliary request 2 leaves out the limitation according to which the modules for detecting the postal code and the world city name are in the parser, and the wording concerning the modules for obtaining a candidate list and for invoking a matcher module is as follows:

" a module for obtaining a candidate list of candidate known addresses from local data built from address data and geocode data, the candidate known addresses corresponding to at least one member of the set consisting of the postal-code, the parsed input address, and the world city name;

a module for invoking a matcher module corresponding to the country code; the matcher module being configured to evaluate the candidate list by matching it to the input address using user-specified or other geocoding restraints".

## **Reasons for the Decision**

### *1. The admissibility of the appeal*

The appeal is admissible.

2. *The invention*

The application relates to a system for providing geocodes (numerical coordinates of a location on the earth's surface) in response to address information (see description page 2, lines 7 to 9). The system intends to deal with various possible address formats which exist around the world (see description page 5, lines 8 to 16). To this end, the geocoding engine of the invention will invoke a parser that is tailored to the country corresponding to the country code which appears in the geocoding request (see description page 6, lines 19 to 20). A list of candidate geocodes is generated on the basis of at least one of the postal code, the parsed input address, and the world city name (description page 24, lines 12 to 15). This candidate list is evaluated by matching it to the input address, and an interpolator generates a geocode corresponding to a selected candidate (description page 24, lines 22 to 23 and page 21, lines 20 to 24).

3. *Added subject-matter; Article 123(2) EPC*

- 3.1 According to the appealed decision (point 3.1.1.1), the amendment to claim 1 according to which the candidate list is selected from a "geocoding database" infringes Article 123(2) EPC, as the original application documents only refer to "local data".

The appellant submits (grounds of appeal section bridging pages 1 and 2) that the original application documents, in particular description page 20 lines 17 to 20 and page 21 lines 20 to 21 refer to geocoding that comprises searching a database and determining candidate addresses by looking up a database, which may therefore be termed a "geocoding database".

3.2 The appealed decision further states that the amendment to claim 1 according to which the modules for detecting a postal code and a world city name are "in the parser" is not disclosed in the original application documents, which in this respect (on page 10, lines 1 to 7) only refer to a generic parser and not to a local parser corresponding to the country code.

The appellant submits that the description passage referred to in the decision mentions the generic parser only as an example and that the skilled person would understand that a local parser, if available, would work in the same manner. The appellant further points out that it is clear from the original description (page 20, line 17 to page 21, line 2) that the "significant pieces" identified by the local parser include the postal code and city name. The appellant finally points out that the original description (page 22, lines 5 to 6 and 17 to 20) makes it clear that the postal code is identified by the parser regardless of whether a generic or a local parser is used.

3.3 The board of appeal accepts the appellant's reasoning, according to which the requirements of Article 123(2) EPC have been complied with.

4. *Inventive step (Article 56 EPC 1973) - main request*

4.1 With regard to claim 1 of the main request, the board can partially follow the reasoning given in the appealed decision (in 3.2.1.3) against the presence of an inventive step in claim 1 of auxiliary request 1.



4.2 It is common ground that D1 constitutes a suitable starting point for the assessment of inventive step. As set out in the appealed decision (3.2.1.2), and as not disputed by the appellant, this document discloses a geocoding engine for providing geocodes in response to receiving address information from a remote user (see figure 1 and page 4, lines 12 to 14 and 24 to 25), the geocoding engine comprising:

a module for invoking a parser to provide a parsed input address (page 23, lines 23 to 30);

modules in the parser for detecting a postal-code (implied from page 18, line 24) and a world city name (implied from page 18, line 22) in the received request;

a module for obtaining a candidate list selected from a geocoding database corresponding to at least one member of the set consisting of the postal-code, the parsed input address, and the world city name (see page 25, lines 29 to 30, page 26, lines 1 to 4, and page 23, line 35 to page 24, line 2); and

a module for invoking a matcher module for evaluating the candidate list by matching it to the input address (page 24, lines 15 to 20).

4.3 The difference between the subject-matter of claim 1 and the disclosure of D1 therefore resides in the presence of

(a) a module for detecting a country code designation in a request to provide a geocode;

(b) a module for invoking a parser corresponding to the country code from the received request to provide a parsed input address;

- (c) a module in this parser for detecting a postal-code corresponding to the country code in the received request; and
- (d) a module for invoking an interpolator corresponding to the country code for generating a geocode corresponding to a selected candidate.

- 4.4 In contrast to the appealed decision (3.2.1.3), the board considers that the distinguishing features (a) to (c) may be considered as contributing together to solving a single problem, viz. the problem of addresses being in one of several countries that do not necessarily use the same address format.
- 4.5 The board considers that feature (d) solves a different problem, viz. that of providing a geocode for an address for which a precise geocode is not readily available (see description page 21, lines 22 and 23).
- 4.6 Regarding the first problem to be solved, it is apparent that D1 does not consider the possibility of addresses being in different countries. See for instance figure 13, where the address only contains a street address, a city, a state and a ZIP code. See also page 2, lines 29 to 31, which makes reference to the USPS ZIP+4 database, which only contains US addresses.
- 4.7 The board considers it immaterial whether the above problem could be motivated by a non-technical requirement specification, as stated in the appealed decision (*loc. cit.*). Indeed, the board holds that a skilled person applying the teaching of D1 will in any case very soon encounter a situation where some of the addresses (e.g. for international customers) will be in a different country that uses a different address

format. Upon encountering such problem, it is obvious that the skilled person will want to solve it.

- 4.8 Since the address format depends on the country, it will be necessary first to know in which country the received address lies and then to provide the appropriate parsing routine, there being a separate parsing routine for each country or group of countries. In other words, there should be a module for determining the correct country, which would easily be implemented by detecting a country code designation in the request, and a module for invoking a parser corresponding to the country code, i.e. features (a) and (b).
- 4.9 As opposed to D1, where only one format of postal code appears, as used in a single given country, the skilled person wanting to solve the above problem will need to deal with different such formats for the different countries. He or she will therefore foresee a module in the country-specific parser for detecting a postal code corresponding to the country code in the received request, i.e. feature (c).
- 4.10 Regarding the separate problem mentioned under 4.5, the board considers it obvious to use interpolation to avoid having to map each address individually. The use of interpolation is a well known technique to estimate the value of a function for a given value of an independent variable (x) for which a precise value of the function (y) is not known. In that case, said function value will be estimated by interpolation, using for instance function values  $y_1$  and  $y_2$  for points  $x_1$  and  $x_2$  that are close to x. The skilled person will quite naturally consider the application of

interpolation for addresses for which a precise geocode is not readily available.

The application does not explain why or how the interpolator should depend on the country code. The description merely states (on page 6, lines 11 to 14) that the class implementing (among others) the interpolator is determined based on a country code and (on page 7, line 1) that the interpolator module is customised. The board however holds that the skilled person will recognise those situations where the interpolator should depend on the country, and will have no difficulty to translate such requirement into program code.

Therefore, the skilled person will foresee a module for invoking a specific interpolator corresponding to the given country code, for generating a geocode corresponding to a selected candidate, i.e. feature (d).

- 4.11 The skilled person will therefore arrive at the subject-matter of claim 1 of the main request without demonstrating any inventive activity.
- 4.12 According to the appellant (grounds of appeal, page 4, second paragraph), the technical problem overcome by the invention is to provide a more cost effective, computationally efficient and accurate geocoding engine, and that to this end (*ibid.*, third paragraph) it has been determined that errors in geocoding arise due to variations in the format of addresses used in different regions, countries and jurisdictions.

The board however submits that the nature of the "error" which would be the consequence of variations in

address format is such that the system of D1 in general simply does not work in other countries. The problem is therefore not to deal with some occasional erroneous geocoding in that system but is simply to deal with addresses in different countries, as stated in 4.4 above.

- 4.13 The board further considers that the skilled person would in general not envisage systematically applying a plurality of parsers to each received address (see grounds of appeal, page 4, fourth paragraph), not only because it would increase the computational overhead as submitted by the appellant (*loc. cit.*), but also because there would not always be a straightforward manner to find out which of the plurality of ensuing results is correct. Instead, the board considers it more straightforward first to determine the correct country and the corresponding parser.
- 4.14 Claim 1 of the main request is consequently considered not to satisfy the requirement of Article 56 EPC 1973.

5. *Auxiliary request 1*

The subject-matter of independent claim 1 of auxiliary request 1 is broader than that of the main request (see VIII. above), and the former therefore also does not satisfy the requirement of Article 56 EPC 1973.

6. *Auxiliary request 2*

Independent claim 1 of auxiliary request 2 differs from that of the main request in that:

- 6.1 (a) the module for detecting the postal code is not limited to being in the parser;

(b) the module for detecting the world city name is not limited to being in the parser;

(c) the candidate list is a list of candidate known addresses from local data built from address data and geocode data, the candidate known addresses corresponding to at least one member of the set consisting of the postal-code, the parsed input address, and the world city name;

(d) the matcher module corresponds to the country code; and

(e) the matcher module is configured to evaluate the candidate list by matching it to the input address using user-specified or other geocoding restraints.

- 6.2 Differences (a) and (b) do not limit but broaden the claim.
- 6.3 Regarding difference (c), the board observes that the manner in which the candidate list has been built imposes no limitation on the claimed apparatus.
- 6.4 Regarding difference (d), the board observes that, for the same reasons as given for the interpolator under 4.10 above, the skilled person will consider using a country-specific matching module.
- 6.5 Regarding difference (e), the board considers it obvious that addresses can only be matched on the basis of some geocoding restraints, either user-specified or specified in some other manner.

6.6 Claim 1 of auxiliary request 2 therefore also does not satisfy the requirement of Article 56 EPC 1973.

## Order

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:



L. Stridde

W. Sekretaruk

Decision electronically authenticated