

### Claims

1. Method for processing a search request comprising the following steps performed with at least one data processor:
- 5       - receiving a search request comprising a sequence of data strings;
- parsing the data strings comprising recognizing at least two matching items among a set of pre-determined items, the set of predetermined items comprising words or groups of words of a natural language type.
- interpreting the search request comprising defining search parameters
- 10 by correlating each matching item with a search data field;
- building a query based on the search parameters.
2. The method of the preceding claims comprising the steps of:
- displaying at a user device (1) a web page with an input zone;
- creating the sequence of data strings by a free-text input of a user in the
- 15 input zone;
- transmitting the sequence of data strings to the processor.
3. The method of any of the preceding claims wherein the step of parsing the data strings comprises the step of recognizing a first matching item by identification of a longest portion of the sequence of data strings that matches one item among the set
- 20 of pre-determined items and defining said item as the first matching item.
4. The method of the preceding claim wherein the identification comprises (i) setting the whole sequence of data strings as potential longest portion, (ii) comparing the potential longest portion with the set of pre-determined items, and (iii):
- setting the potential longest portion as longest portion upon a positive
- 25 comparison;
- or, upon a negative comparison, creating a new potential longest portion by removing from the previous potential longest portion one data string located at the side of an extremity situated opposite a starting extremity of the sequence of data strings, and repeating the steps (i), (ii) and (iii) as long as no positive comparison is
- 30 reached.
5. The method of any of claims 3 or 4 wherein the step of parsing the data strings further comprises a step of recognizing a further matching item by defining a remaining portion as the difference between the sequence of data strings and the first matching item, and, beginning from an extremity situated opposite a starting extremity
- 35 of the sequence of data strings, identifying a longest portion of the sequence of data

strings that matches one item among the set of pre-determined items and defining said item as a further matching item.

6. The method of the preceding claim wherein the step of recognizing a further matching item is repeated by defining a further remaining portion as the difference between the previous remaining portion and the previous further matching item, and, beginning from an extremity situated opposite a starting extremity of the sequence of data strings, identifying a longest portion of the sequence of data strings that matches one item among the set of pre-determined items and defining said item as a another further matching item, and wherein the step of recognizing a further matching item is repeated until the further remaining portion is empty.

7. The method of any of the preceding claims wherein the step of parsing the data strings comprises determining a distance value between a portion of the sequence of data strings and at least one item of the set of pre-determined items.

8. The method according to the preceding claim comprising setting said item as matching item upon the distance value being above a pre-determined threshold.

9. The method according to claim 7 comprising requesting a user confirmation that said item is to be used in lieu of said portion of the sequence of data strings and, upon receipt of the user confirmation, using said item as matching item.

10. The method according to the preceding claim wherein requesting the user confirmation comprising displaying an amended sequence of data strings at a user device (1), in which said portion of the sequence of data strings is replaced by said item.

11. The method of the preceding claim comprising displaying the amended sequence of data strings in the form of a hyperlink and detecting the user confirmation upon a user click action on said hyperlink.

12. The method of any of the preceding claims wherein the search request is for travel service information.

13. The method according to the preceding claim wherein the step of interpreting comprises correlating at least one matching item with a search data field selected among a travel origin, a travel destination, a departure date.

14. The method according to any of the two preceding claims wherein the set of pre-determined items comprises travel cryptic commands.

15. The method of any of the three preceding claims wherein the step of building comprises defining default search parameters and basing the query both on the search parameters and the default search parameters.

16. The method of the preceding claim comprising using user profile data for defining the default search parameters.

17. The method of any of the five preceding claims wherein the query is a low fare search request.

5 18. The method of any of the preceding claims comprising the step of sending the query to at least one travel data service, receiving a response to the query and transmitting a reply to the search request.

10 19. The method of the preceding claim wherein the step of building a query comprises converting at least one matching item into a formatted item whose format is compatible with the travel data service.

20. The method of the preceding claim comprising accessing at least one data repository storing correspondence tables between pre-determined items and formatted items.

15 21. The method of any of claims 18 to 20 comprising incorporating the reply in a web page.

22. The method of the preceding claim wherein the web page incorporates an editable search request definition area filled by default with the sequence of data strings.

20 23. The method of claims 10 and 21 wherein the web page incorporates an editable search request definition area filled by default with the amended sequence of data strings.

24. The method of any of the preceding claims wherein the set of pre-determined items is stored in at least one database.

25 25. A computer readable medium having recorded thereon a computer-readable program comprising code means adapted to perform all the steps of the method according to any of the preceding claims.

26. A computer-readable program comprising code means adapted to perform all the steps of the method according to any of claims 1 to 24.

30 27. A system for processing a search request comprising at least one data processor programmed for:

- receiving a search request comprising a sequence of data strings;
- parsing the data strings comprising recognizing at least two matching items among a set of pre-determined items, the set of predetermined items comprising words or groups of words of a natural language type.
- 35 - interpreting the search request comprising defining search parameters by correlating each matching item with a search data field;

- building a query based on the search parameters..

28. System of the preceding claim, comprising computer software stored in a non-transitory computer-readable memory medium that is executed by the at least one data processor.

CLAIMS

1. A method for processing a travel-related search request comprising:

receiving, at one or more processors, a free-text input that relates to the travel-related search request, the free-text input comprising a sequence of data strings;

matching, by the one or more processors, a first portion of the data strings to a first item from a set of pre-determined items and a second portion of the data strings to a second item from the pre-determined items, wherein each of the pre-determined items are associated with a search data field type;

defining, by the one or more processors, a plurality of search parameters based on the search data field type of the first item and the search data field type of the second item; and

building, by the one or more processors, a query for the travel-related search request based on the search parameters,

wherein matching the first portion of the data strings to the first item from the pre-determined items comprises identifying a longest portion of the sequence of data strings that matches a first one of the pre-determined items and defining the first one of the pre-determined items as the first item, and

wherein matching the second portion of the data strings to the second item from the pre-determined items comprises:

after matching the first portion of the data strings to the first item, defining a first remaining portion as the difference between the sequence of data strings and the longest portion of the sequence of data strings that matches the first one of the pre-determined items;

identifying a longest portion of the first remaining portion that matches a second one of the pre-determined items; and

defining the second one of the pre-determined items as the second item.

2. The method of claim 1, further comprising:

providing a web page with an input zone for display on a user device, wherein the free-text input is received via the input zone.

3. The method of claim 1, wherein identifying the longest portion of the sequence of data strings that matches the first one of the pre-determined items comprises:

(i) setting the whole sequence of data strings as a first potential longest portion;

(ii) comparing the first potential longest portion with the pre-determined items;  
and

(iii) performing the following:

setting the first potential longest portion as the longest portion that matches  
one of the pre-determined items upon a positive comparison; and  
upon a negative comparison:

creating a second potential longest portion by removing from the first  
potential longest portion one of the data strings located at an extremity of the  
first potential longest portion situated opposite a starting extremity of the  
sequence of data strings; and

repeating steps (ii) and (iii) using the second potential longest portion  
as the first potential longest portion.

4. The method of claim 1, wherein identifying the longest portion of the first remaining  
portion that matches the second one of the pre-determined items comprises:

beginning from an extremity situated opposite a starting extremity of the sequence of  
data strings, identifying the longest portion of the first remaining portion that matches the  
second one of the pre-determined items.

5. The method claim 4, further comprising:

matching a third portion of the data strings to a third item from the pre-determined  
items by:

defining a second remaining portion as the difference between the first  
remaining portion and the longest portion of the first remaining portion that matches  
the second one of the pre-determined items;

beginning from an extremity situated opposite the starting extremity of the  
sequence of data strings, identifying a longest portion of the second remaining  
portion that matches a third one of the pre-determined items; and

defining the third one of the pre-determined items as the third item; and

repeating the matching for additional portions of the sequence of data strings until a  
remaining portion can no longer be defined.

6. The method of claim 1, wherein identifying the longest portion of the sequence of  
data strings that matches the first one of the pre-determined items comprises:

determining a distance value between the longest portion of the sequence of data strings and one or more of the pre-determined items.

7. The method according to claim 6, wherein identifying the longest portion of the sequence of data strings that matches the first one of the pre-determined items further comprises:

setting one of the one or more pre-determined items as the matched first one of the pre-determined items based on the distance value for the one pre-determined item being above a pre-determined threshold.

8. The method according to claim 6, wherein identifying the longest portion of the sequence of data strings that matches the first one of the pre-determined items further comprises:

in response to the distance value for one of the one or more pre-determined items being above a pre-determined threshold, requesting a user confirmation that the one pre-determined item is to be used in lieu of the longest portion of the sequence of data strings; and

upon receipt of the user confirmation, using the one pre-determined item as the first one of the pre-determined items.

9. The method according to claim 8, wherein requesting the user confirmation comprises:

providing an amended sequence of data strings for display at a user device, wherein the amended sequence of data strings includes the sequence data strings from the free-text input without the longest portion of the sequence of data strings, which is replaced by the one pre-determined item.

10. The method of claim 9, wherein the amended sequence of data strings is configured to be displayed as a hyperlink on the user device, and the user confirmation is received upon a user selection of the hyperlink.

11. The method according to claim 1, wherein the search field type of the first item and/or the second item is selected from the group consisting of a travel origin, a travel destination, and a departure date.

12. The method of claim 1, further comprising: defining one or more default parameters, wherein the query is further based on the default parameters.
- 5 13. The method of claim 12, wherein the one or more default parameters are defined based on user profile data.
14. The method of claim 1, wherein the query is a low fare search request.
- 10 15. The method of claim 1, further comprising:  
sending the query to at least one travel data service;  
receiving a response to the query; and  
transmitting a reply to the travel-related search request based on the response.
- 15 16. The method of claim 15, wherein building a query comprises:  
converting the matched first item and/or the matched second item into a formatted item compatible with the travel data service.
- 20 17. The method of claim 16, wherein building a query further comprises:  
accessing a data repository storing one or more correspondence tables between one or more of the pre-determined items and one or more formatted items, the one or more formatted items including the formatted item compatible with the travel data service.
- 25 18. The method of claim 17 further comprising:  
incorporating the reply in a web page.
19. The method of claim 18, wherein the web page includes an editable search request definition area filled by default with the sequence of data strings.
- 30 20. The method of claim 15, wherein identifying the longest portion of the sequence of data strings that matches the first one of the pre-determined items comprises:  
determining a distance value between the longest portion of the sequence of data strings and one or more of the pre-determined items;  
in response to the distance value for one of the one or more pre-determined items  
35 being above a pre-determined threshold, requesting a user confirmation that the one pre-

determined item is to be used in lieu of the longest portion of the sequence of data strings;  
and

upon receipt of the user confirmation, using the one pre-determined item as the  
matched first one of the pre-determined items, wherein requesting the user confirmation that  
5 the one pre-determined item is to be used comprises:

providing an amended sequence of data strings for display at a user device, wherein  
the amended sequence of data strings includes the sequence of data strings from the free-  
text input without the longest portion of the sequence of data strings, which is replaced by  
the one pre-determined item, and a web page configured for display on the user device  
10 includes an editable search request definition area filled by default with the amended  
sequence of data strings.

21. A product comprising:

a non-transitory computer-readable medium; and

15 computer software stored on the medium, wherein the computer software, when  
executed by at least one data processor, causes the at least one data processor to:

receive a free-text input that relates to the travel-related search request, the  
free-text input comprising a sequence of data strings;

match a first portion of the data strings to a first item from a set of pre-  
20 determined items and a second portion of the data strings to a second item from the  
pre-determined items, wherein each of the pre-determined items are associated with  
a search data field type;

define a plurality of search parameters based on the search data field type of  
the first item and the search data field type of the second item; and

25 build a query for the travel-related search request based on the search  
parameters,

wherein the computer software causes the at least one data processor to match the  
first portion of the data strings to the first item from the pre-determined items by  
causing the at least one data processor to identify a longest portion of the sequence  
30 of data strings that matches a first one of the pre-determined items and define the  
first one of the pre-determined items as the first item, and wherein the computer  
software causes the at least one data processor to match the second portion of the  
data strings to the second item from the pre-determined items by causing the at least  
one processor to:

after the first portion of the data strings is matched to the first item, define a first remaining portion as the difference between the sequence of data strings and the longest portion of the sequence of data strings that matches the first one of the pre-determined items;

5           identify a longest portion of the first remaining portion that matches a second one of the pre-determined items; and define the second one of the pre-determined items as the second item.

22.   A system for processing a travel-related search request comprising:

10           at least one data processor; and

          a memory coupled to the at least one data processor, the memory storing computer software that, when executed by the at least one data processor, causes the system to:

15           receive a free-text input that relates to the travel-related search request, the free-text input comprising a sequence of data strings;

          match a first portion of the data strings to a first item from a set of pre-determined items and a second portion of the data strings to a second item from the pre-determined items, wherein each of the pre-determined items are associated with a search data field type;

20           define a plurality of search parameters based on the search data field type of the first item and the search data field type of the second item; and

          build a query for the travel-related search request based on the search parameters,

25           wherein the computer software causes the system to match the first portion of the data strings to the first item from the pre-determined items by causing the system to identify a longest portion of the sequence of data strings that matches a first one of the pre-determined items and define the first one of the pre-determined items as the first item, and

30           wherein the computer software causes the system to match the second portion of the data strings to the second item from the pre-determined items by causing the system to:

35           after the first portion of the data strings is matched to the first item, define a first remaining portion as the difference between the sequence of data strings and the longest portion of the sequence of data strings that matches the first one of the pre-determined items;

identify a longest portion of the first remaining portion that matches a second one of the pre-determined items; and  
define the second one of the pre-determined items as the second item.