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(54) **ALTERNATE CHARACTER SET DOMAIN NAME SUGGESTION AND REGISTRATION USING TRANSLATION AND TRANSLITERATION**

(71) Applicant: **VERISIGN, INC.**, Reston, VA (US)

(72) Inventors: **Sumit Daryani**, Ashburn, VA (US); **Craig Davies**, Manassas Park, VA (US)

(73) Assignee: **VERISIGN, INC.**, Reston, VA (US)

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H04L 29/12	(2006.01)
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G06F 40/58	(2020.01)
G06F 40/129	(2020.01)
G06F 40/157	(2020.01)
G06F 40/205	(2020.01)

(52) **U.S. Cl.**

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(58) **Field of Classification Search**

CPC H04L 29/12066; H04L 61/1511; H04L 29/12009; H04L 29/06; H04L 29/08072; H04L 29/12; H04L 61/302; H04L 61/3025; H04L 61/3035; G06F 17/3064; G06F 17/30867; G06F 17/30864; G06F 17/30672; G06F 13/00; G06F 17/27; G06F 17/28; G06F 17/289; G06F 17/2705; G06F 17/2863; G06F 40/53; G06F 40/58; G06F 40/129; G06F 40/157; G06F 40/205; G06Q 30/02

USPC 707/767; 709/245

See application file for complete search history.

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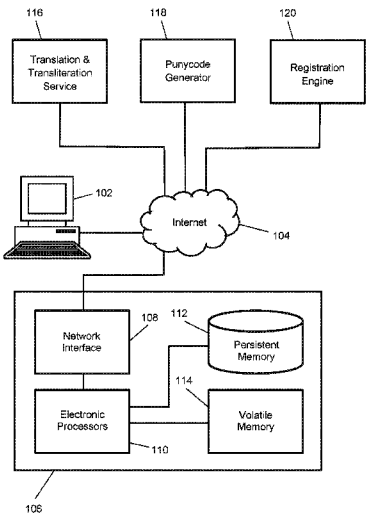
Primary Examiner — Robert B Harrell

(74) *Attorney, Agent, or Firm* — MH2 Technology Law Group, LLP

(57) **ABSTRACT**

Some embodiments provide domain name suggestions based on a user-provided ASCII phrase translated and/or transliterated into any of a number of supported non-English language character sets. To suggest non-English-language domain names, some embodiments parse, translate, and transliterate the user-provided ASCII names into domain names that include at least one non-English language character. Moreover, some embodiments determine the DNS registration status (e.g., as a second-level domain) of the Punycode (in ASCII) corresponding to these non-English domain names and provide the user with the ability to register any that are unregistered.

20 Claims, 5 Drawing Sheets



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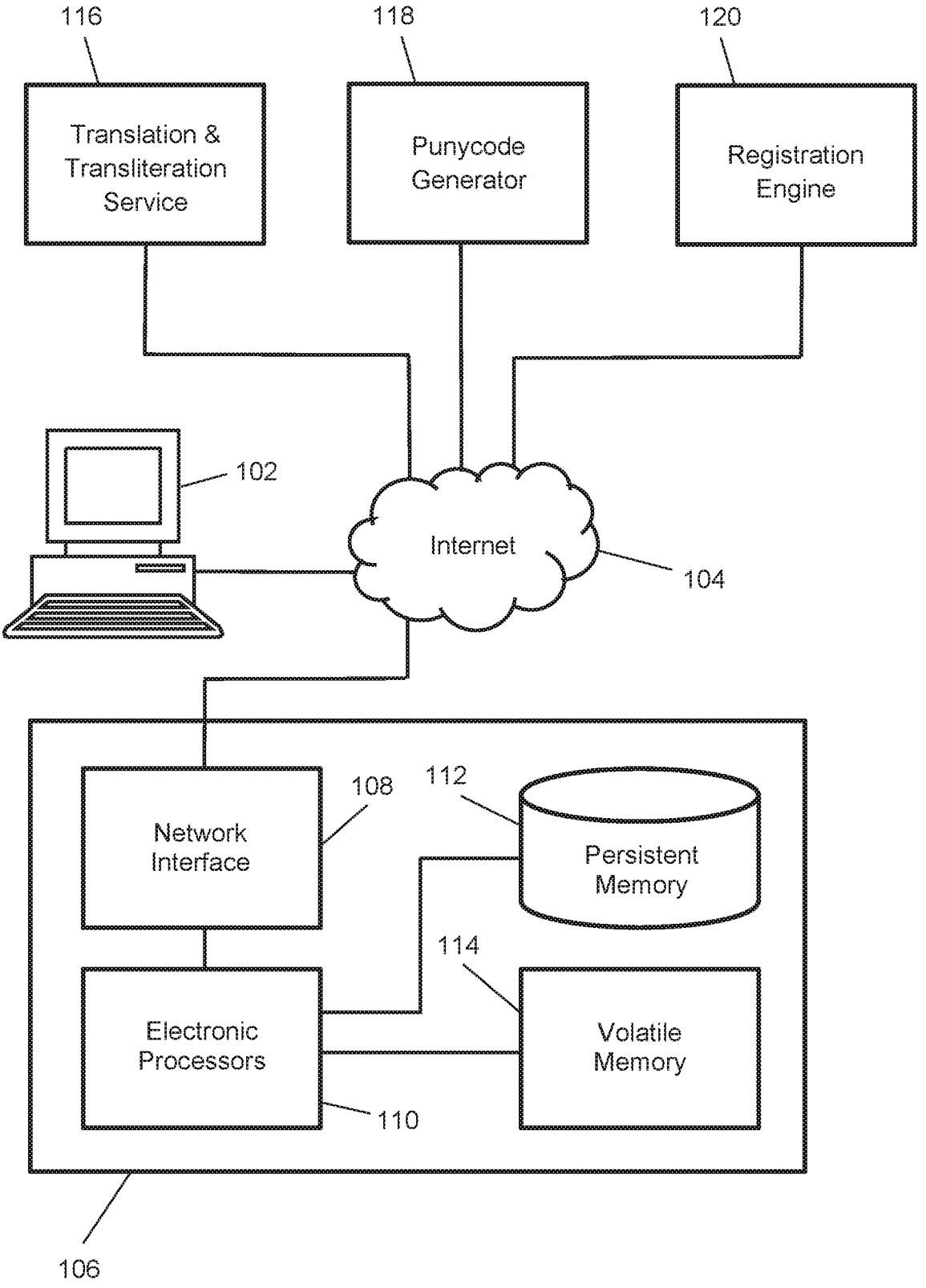
116
118
120
Translation & Transliteration Service
Punycode Generator
Registration Engine
102
Internet
104
Network Interface
108
112
Persistent Memory
114
Electronic Processors
Volatile Memory
110
106

Fig. 1

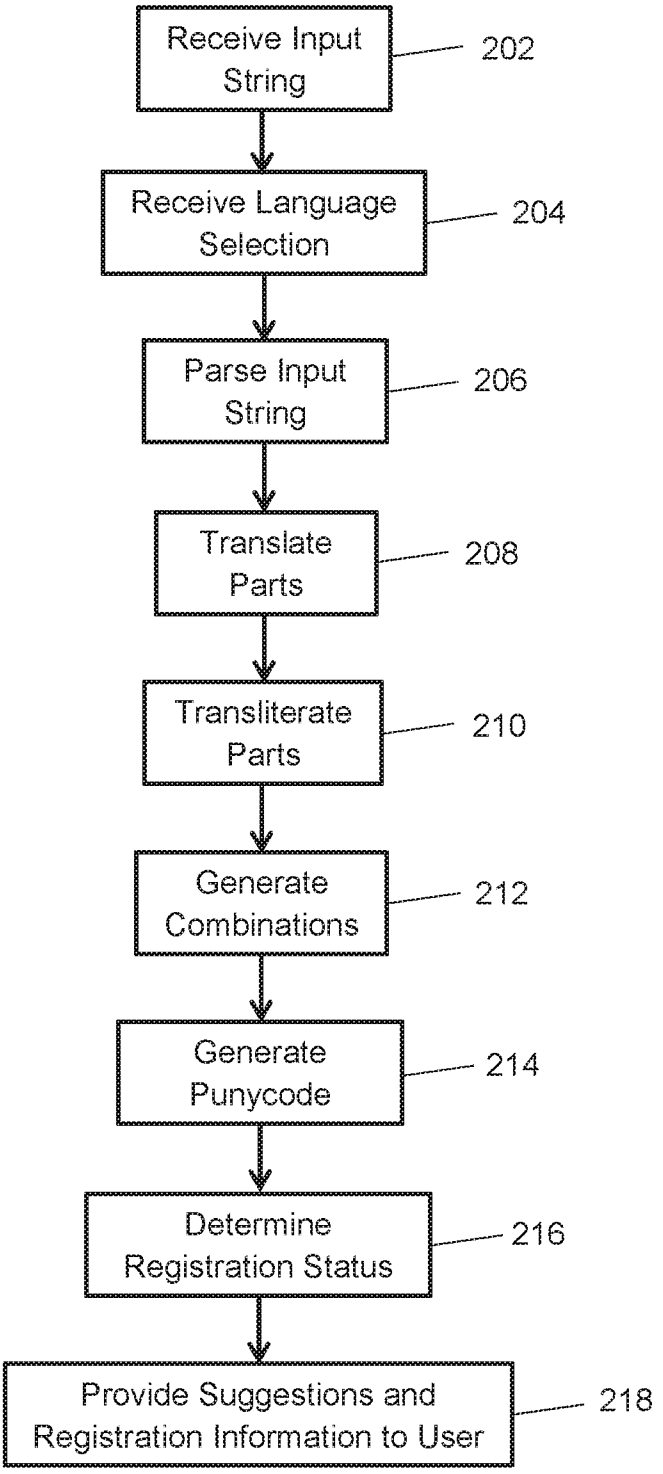
Receive Input String
202
Receive Language Selection
204
Parse Input String
206
Translate Parts
208
Transliterate Parts
210
Generate Combinations
212
Generate Punycode
214
Determine Registration Status
216
Provide Suggestions and Registration Information to User
218

Fig. 2

Unicode	Punycode	VCards	Name Servers	Events	Status
ευτυχισμένος.ντιον.com	xn--ixaikqcpiacqd4behjfb0b.com	[Fig. 4, 400]	ns1.hb.com	Registration date: 2015-06-29T01:11:12Z, Last changed: 2016-06-29T09:31:54Z	Registered, renew prohibited
χάππυέθνος.net	xn--hxac7aukca2anq.net	[Fig. 5, 500]	ns1.sba.com, ns2.sba.com	Registration date: 2015-06-29T01:11:12Z, last changed: 2016-06-29T09:31:54Z	Registered, transfer prohibited
χάππυντιον.com	xn--hxakyoclda2bhs.com	n/a	n/a	n/a	Available

300

Fig. 3

role: Registrar
name: Domains Inc.
adr: 123 Somewhere St, Scottsdale, AZ, United States of America
tel: +1-480-624-2546
email: domains@domainsinc.com
role: Registrant
name: XYZ Corp.
adr: 111 Abc Lane, Rochester, NY, United States of America
tel: +1-585-555-1234
role: Administrative
name: John Doe
email: dns-admin@xyzcorp.com
400

Fig. 4

role: Registrar
name: SBA Domains
adr: 2121 park street, Seattle, WA, United States of America
role: Registrant
name: Nation One Corporation
adr: 1 Maple Ave, Reston, VA, United States of America
tel: +1-703-111-1111
email: corp@nationone.net
500

Fig. 5

ALTERNATE CHARACTER SET DOMAIN NAME SUGGESTION AND REGISTRATION USING TRANSLATION AND TRANSLITERATION

FIELD

This disclosure relates generally to registering internet domain names.

BACKGROUND

In the internet Domain Name System (DNS), domain names may be registered to registrants by registrars, who act as intermediaries between the registrant and a master registry. Currently, only domain names that are restricted to American Standard Code for Information Exchange (ASCII) characters can be registered. However, some web browsers can render and interpret non-English-character domain names, e.g., using Unicode characters or Punycode characters encoded by ASCII characters. That is, some web browsers can accept and process non-English character domain names (e.g., by decoding ASCII Punycode representations or by directly rendering Unicode characters) in their address bar field. Accordingly, a gap exists between non-English character domain name registration and non-English character domain name usage. Potential domain name registrants need an easy way to find domains in their native (non-English) language, check their availability status, obtain contact information if they are registered, and register them if they are unregistered.

SUMMARY

According to various embodiments, a computer-implemented method of providing suggested domain names and their registration statuses is provided. The method includes providing a network interface communicatively coupled to the Internet; receiving at the network interface an input string provided by a user; receiving at the network interface a language selection provided by the user; parsing, by an electronic processor, the input string into a plurality of words; translating, by an electronic processor, each of the plurality of words into a language specified by the language selection, such that a plurality of translated words are produced; transliterating, by an electronic processor, each of the plurality of words into the language specified by the language selection, such that a plurality of transliterated words are produced; generating, by at electronic processor, a plurality of combinations of multiple words, each combination of multiple words of the plurality of combinations of multiple words including words selected from at least one of the plurality of translated words and the plurality of transliterated words; generating, by at least one electronic processor, a Punycode representation of at least a selected one of the plurality of combinations of multiple words; determining a domain name system (DNS) registration status of a domain name including the Punycode representation; and providing to the user, by the network interface, the domain name including the Punycode representation and a DNS registration status of the domain name including the Punycode representation.

Various optional features of the above embodiments include the following. The DNS registration status may indicate that the domain name including the Punycode representation is not registered. The method may include registering the domain name including the Punycode representation to the user. The input string may consist of American Standard Code for Information Interchange (ASCII) characters. The network interface may include a representational state transfer (REST) interface. The language selection may include a language that includes a plurality of non-English characters in its alphabet. The combination of multiple words may include words selected from both the plurality of translated words and the plurality of transliterated words. The DNS registration status indicates that the domain name including the Punycode representation may be registered, and the method may further include providing to the user, by the network interface, an identity of a registrant of the domain name including the Punycode representation. The method may further include providing to the user, by the network interface, an expiration date of a DNS registration of the domain name including the Punycode representation. At least the selected one of the plurality of combinations of multiple words may include at least one of the plurality of translated words and at least one of the plurality of transliterated words, where the Punycode representation includes a representation of the at least one of the plurality of translated words and the at least one of the plurality of transliterated words.

According to various embodiments, a system for providing suggested domain names and their registration statuses is provided. The system includes a network interface communicatively coupled to the internet, the network interface configured to receive an input string provided by a user and receive a language selection provided by the user; and at least one electronic processor configured to: parse the input string into a plurality of words; translate each of the plurality of words into a language specified by the language selection, such that a plurality of translated words are produced; transliterate each of the plurality of words into the language specified by the language selection, such that a plurality of transliterated words are produced; generate a plurality of combinations of multiple words, each combination of multiple words of the plurality of combinations of multiple words including words selected from at least one of the plurality of translated words and the plurality of transliterated words; generate a Punycode representation of at least a selected one of the plurality of combinations of multiple words; and determine a domain name system (DNS) registration status of a domain name including the Punycode representation; where the network interface is further configured to provide to the user the domain name including the Punycode representation and a DNS registration status of the domain name including the Punycode representation.

Various optional features of the above embodiments include the following. The DNS registration status may indicate that the domain name including the Punycode representation is not registered. The network interface may be further configured to register domain name including the Punycode representation to the user. The input string may consist of American Standard Code for Information Interchange (ASCII) characters. The network interface may include a representational state transfer (REST) interface. The language selection may include language that includes a plurality of non-English characters in its alphabet. The combination of multiple words may include words selected from both the plurality of translated words and the plurality of transliterated words. The DNS registration status may indicate that the domain name including the Punycode representation is registered, where the network interface is further configured to provide to the user an identity of a registrant of the domain name including the Punycode representation. The network interface may be further con-

figured to provide to the user an expiration date of a DNS registration of the domain name including the Punycode representation. At least the selected one of the plurality of combinations of multiple words may include at least one of the plurality of translated words and at least one of the plurality of transliterated words, where the Punycode representation includes a representation of the at least one of the plurality of translated words and the at least one of the plurality of transliterated words.

BRIEF DESCRIPTION OF THE DRAWINGS

Various features of the embodiments can be more fully appreciated, as the same become better understood with reference to the following detailed description of the embodiments when considered in connection with the accompanying figures, in which:

FIG. **1** is a schematic diagram of a system according to some embodiments;

FIG. **2** is a flowchart of a method according to some embodiments;

FIG. **3** illustrates a table depicting an example partial output according to some embodiments;

FIG. **4** illustrates a table depicting a VCard portion of the example output of FIG. **3** according to some embodiments; and

FIG. **5** illustrates a table depicting a VCard portion of the example output of FIG. **3** according to some embodiments.

DESCRIPTION OF THE EMBODIMENTS

Reference will now be made in detail to example implementations, illustrated in the accompanying drawings. Wherever possible, the same reference numbers will be used throughout the drawings to refer to the same or like parts. In the following description, reference is made to the accompanying drawings that form a part thereof, and in which is shown by way of illustration specific exemplary embodiments in which the invention may be practiced. These embodiments are described in sufficient detail to enable those skilled in the art to practice the invention and it is to be understood that other embodiments may be utilized and that changes may be made without departing from the scope of the invention. The following description is, therefore, merely exemplary.

Some embodiments provide domain name suggestions based on a user-provided ASCII phrase translated and/or transliterated into any of a number of supported non-English language character sets. Such embodiments may provide a Representational State Transfer (REST) Application Program Interface (API) and/or user interface to allow users to input an ASCII phrase and choice of language. Further, some embodiments utilize Registration Data Access Protocol (RDAP) directories to determine the registration status of the suggested domain names.

To suggest non-English-language domain names, some embodiments parse, translate, and transliterate the user-provided ASCII names into domain names that include at least one non-English language character. Moreover, some embodiments determine the DNS registration status (e.g., as a second-level domain) of the Punycode (in ASCII) corresponding to these non-English domain names. Thus, some embodiments provide users with suggestions options for registering non-English-language domain names, and some embodiments can affect the registration upon user authorization. Some embodiments also provide users with registration information such as contacts, date renewal, and name server identification, particularly, though not exclusively, for currently-registered names. These and other embodiments are described in detail herein.

FIG. **1** is a schematic diagram of a system according to some embodiments. The system may be based around an electronic hardware internet server computer **106**, which may be communicatively coupled to a network such as the internet **104**. Server computer **106** includes network interface **108** to affect the communicative coupling to the internet **104**. Network interface **108** may include a physical network interface, such as a network adapter. Server computer **108** may be a special-purpose computer, adapted for reliability and high-bandwidth communications. Thus, server computer **108** may be embodied in a cluster of individual hardware server computers, for example. Alternately, or in addition, server computer **108** may include redundant power supplies. Persistent memory **112** may be in a Redundant Array of Inexpensive Disk drives (RAID) configuration for added reliability, and volatile memory **114** may be or include Error-Correcting Code (ECC) memory hardware devices. Server computer **108** may further include one or more electronic processors **110**, which may be multi-core processors suitable for handling large amounts of information. Electronic processors **110** are communicatively coupled to persistent memory **112**, and may execute instructions stored thereon to effectuate the techniques disclosed herein, e.g., as shown and described in reference to FIG. **2**.

Server computer **106** is communicatively coupled to, or in some embodiments includes, translation and transliteration service **116**, Punycode generator **118**, and registration engine **120**. Thus, as depicted in FIG. **1**, translation and transliteration service **116**, Punycode generator **118**, and registration engine **120** are coupled to server computer **106** through the internet. However, in other embodiments, any, or a combination, of translation and transliteration service **116**, Punycode generator **118**, and registration engine **120** can be included on the same premises as server computer **106**, or within the same computer hardware as server computer **106**. When coupled to server computer **106** through the internet **104**, translation and transliteration service **116**, Punycode generator **118**, and registration engine **120** can each be implemented as server computers having similar hardware properties to server computer **106**. Any or each of translation and transliteration service **116**, Punycode generator **118**, and registration engine **120** may be implemented using APIs to handle the messaging between themselves as servers and client computers.

Translation and transliteration service **116** receives character strings (e.g., words in ASCII) and a language selection from a client computer, and serves translations and transliterations of the received strings into the selected language. Translation and transliteration service **116** may be embodied as a single service or as separate translation and transliteration services. Whether unitary or separate, translation and transliteration service **116** may serve translations and transliterations serially or in parallel. Translation and transliteration service **116** may serve the translations and transliterations in Unicode, Punycode, or both. "Translation" as used herein means returning a word in the selected language that has the same meaning as the received word. For example, the Greek translation of "nation" is "έθνος", because the meaning of "έθνος" is "nation". "Transliteration" as used herein means returning a string of characters in the selected language that each correspond to the characters of the received word. The correspondence may be that the characters are pronounced alike or similarly. The correspondence

may be one-to-one or m-to-n, where either or both of m and n are greater than one (e.g., in the case of dipthongs). As example of a one-to-one correspondence, the Greek transliteration of "nation" is "νατιον", because each letter in "nation" has a corresponding character in "νατιον" with an identical or similar sound.

Translation and transliteration service **116** may include an electronically stored set of foreign-language dictionaries, e.g., a set of database tables that each include English and corresponding foreign language words, one table per foreign language. To serve a translation, transliteration and translation service **116** may use the input word as a database key for the table that corresponds to the selected language to retrieve the corresponding foreign-language word. The corresponding foreign-language word is then served to the requesting client, e.g., in Unicode, Punycode, or both.

Translation and transliteration service **116** may include an electronically stored set of character correspondences, e.g., as a set of database tables that include the English language alphabet in correspondence with characters in the respective foreign language. To serve a transliteration, translation and transliteration service **116** may parse the input word into individual English letters (or phonemes), and then use the letters (or phonemes) as database keys for the table that corresponds to the selected language to retrieve the corresponding individual (or multiple) characters. Translation and transliteration service **116** may integrate the resulting foreign-language characters into a foreign-language string in Unicode, Punycode or both, and serve the string to the requesting client computer.

Punycode generator **118** may be used in embodiments in which translation and transliteration service **116** serves strings in Unicode but not Punycode. In such embodiments, server computer **106** may receive Unicode translation and/or transliteration strings from translation and transliteration service **116**, send them to Punycode generator **118**, and receive corresponding Punycode representations of the strings served by Punycode generator **118**.

Registration engine **120** may be a Registration Data Access Protocol (RDAP) compliant server. Such an RDAP-compliant server receives Hypertext Transfer Protocol (HTTP) requests and returns responses in JavaScript Object Notation (JSON) according to a REST protocol. In particular, registration engine **120** receives a domain name (typically second-level or higher) and serves DNS registration information for the received domain name. Served information includes, for example, registration status, and, for currently-registered domain names, registration expiration, point of contact information, organization identifier, and name servers.

Also depicted in FIG. **1** is client computer **102**. Client computer **102** may be a desktop, laptop, tablet, or smartphone, for example. Client computer **102** is communicatively coupled to the internet **104**, and, therefore, to server computer **106**. Client computer **102** may send queries to server computer **106** to receive non-English-language domain name information as disclosed herein, e.g., as shown and described in reference to FIG. **2**, below.

FIG. **2** is a flowchart of a method according to some embodiments. The method of FIG. **2** may be practiced using the hardware and software shown and described in reference to FIG. **1**, above. In particular, the steps of FIG. **2** are phrased from the viewpoint of server computer **106** interacting with client computer **102**. Such a client computer may be operated by a person wishing to register a domain name in language that uses a non-English alphabet. Such languages include, by way of non-limiting example, Greek, Hindi, Urdu, Thai, Russian, Armenian, Arabic, Persian, Bengali, Turkish, and Asian languages (e.g., Chinese, Japanese, Vietnamese, Korean, etc.). Essentially any language that uses characters that do not appear in the English-language alphabet is contemplated.

At block **202**, server computer **106** receives an input string from client computer **102** via internet **104**. Client computer **102** may send the input string to server computer **116** using an API and/or user interface provided by server computer **106**. For example, a user of client computer **102** may enter the string in a graphical user interface on a web page provided by, or otherwise in communication with, server computer **106**. The web page may provide the input string to server computer **106** via the API. The input string may be a string of words in ASCII text, for example. The input string may or may not include spaces or other delimiters between its constituent words.

At block **204**, server computer **106** receives a language selection from client computer **102**. The language selection may accompany the input string received at block **202**, or may be received separately. Similar to the input string, client computer **102** may send the language selection to server computer **116** using an API and/or user interface provided by server computer **106**. For example, a user of client computer **102** may select the language using a graphical user interface (e.g., radio buttons, a drop-down menu, etc.) on a web page provided by, or otherwise in communication with, server computer **106**, and the web page may send the selection to sever computer **106** using an API. The language selection may be of any supported language, by way of non-limiting example, Greek, Hindi, Urdu, Thai, Russian, Armenian, Arabic, Persian, Bengali, Turkish, and Asian languages (e.g., Chinese, Japanese, Vietnamese, Korean, etc.). Any language that does not use the same characters as English is contemplated. The language selection is intended to be for a domain name that the user of client computer **102** wishes to investigate and may wish to register. As detailed herein, server computer **106** constructs potential domain names for presentation to, and possibly registration by, the person.

At block **206**, server computer **106** parses the input string received at block **202**. If the input string includes spaces or other delimiters between words, then server computer **106** may parse the words accordingly, i.e., breaking the string at the delimiters. Otherwise, server computer **106** may utilize a different parsing technique. For example, server computer **106** may use an English-language dictionary, e.g., stored locally or remotely as a table in an electronic database, to progressively match initial segments of the string until no further match is obtained, at which point the initial segment is parsed out and the process returns to the remainder of the string, if any. Other parsing techniques are contemplated in the alternative. Essentially any technique that accepts and partitions a string of characters into its constituent parts, where each part is a word, is suitable. In more detail, any technique that accepts a string of characters and returns a plurality of disjoint substrings of characters, each substring a word, such that the join of the substrings is the original string of characters, is acceptable. The returned substrings/parts may be returned as a single string with known delimiters between words, in a data structure that inherently separates the substrings, or using any other technique that keeps the substrings/parts separate.

Note that some embodiments may utilize a web service or other technique for the parsing of block **206**. In other words, the system of FIG. **1** may include a remote parsing service

communicatively coupled to the internet, as with translation and transliteration service **116**, Punycode generator **118**, and registration engine **120**.

At block **208**, the technique translates the parts produced by the partitioning of the input string per block **206**. The translation is into the language(s) selected per block **204**. The translation may be accomplished by translation and transliteration service **116** of FIG. **1**, for example. The translations may be returned to server **106** using an API, for example, in embodiments that utilize a remote translation and transliteration service as shown in FIG. **1**. The translations may be represented in Unicode or Punycode.

At block **210**, the technique transliterates the parts produced by the partitioning of the input string according to block **206**. The transliteration is into the language(s) selected per block **204**. The transliteration may be accomplished by translation and transliteration service **116** of FIG. **1**, for example. The transliterations may be returned to server **106** using an API, for example, in embodiments that utilize a remote translation and transliteration service as depicted in FIG. **1**. The transliterations may be represented in Unicode or Punycode.

At block **212**, the technique generates combinations of the translations and transliterations received at blocks **208** and **210**, respectively. That is, the technique generates multiple output strings corresponding to the input string received at block **202**, where each of the multiple output strings replaces at least one of the words in the input string received at block **202** with either a corresponding translation or a corresponding transliteration. In some embodiments, block **212** outputs all possible output string combinations that result from substituting at least one of the constituent words of the input string with a corresponding translation or transliteration.

For example, an input string received at block **202** may be "happynation" and the language selection received at block **204** may be Greek. The parsing of block **206** breaks the input string into its constituent substrings, i.e., parts, which may be represented here (using a space as a delimiter character) as "happy nation". These parts may be individually translated per block **208** into, respectively, "ευτυχισμένος " and "έθνος ". The same parts may be individually transliterated into "χάππυ " and "νατιον ", respectively, at block **210**. Block **202** produces every combination that results from replacing one or both of "happy" and "nation" with a corresponding translation or transliteration. Table 1 below depicts such combinations.

TABLE 1

	Explanation	
Output String	First Word	Second Word
ευτυχισμένος nation	Translated	Unchanged
happyέθνος	Unchanged	Translated
ευτυχισμένοςέθνος	Translated	Translated
χάππυ nation	Transliterated	Unchanged
happyvatiov	Unchanged	Transliterated
χάππυνατιον	Transliterated	Transliterated
ευτυχισμένοςνατιον	Translated	Transliterated
χάππυέθνος	Transliterated	Translated

The technique of block **212** may output the combinations in any suitable format, e.g., as a string with predetermined delimiters, as a list, or as any other data structure that preserves the individual combination strings. Further, the strings may be output in Unicode or Punycode, depending on whether translation and transliteration service **116** produces outputs in Unicode or Punycode.

At block **214**, the technique generates Punycode for the combinations output by block **212** if they are not already in Punycode. To that end, the technique may utilize Punycode generator **118** of FIG. **1**. The Punycode may be returned to server **106** using an API, for example, in embodiments that utilize a remote Punycode generator as depicted in FIG. **1**. Block **214** may output the combinations in any suitable format, e.g., as a string with predetermined delimiters, as a list, or in any other data structure that preserves the individual combination Punycode strings. Note that the generated Punycode is entirely in ASCII, therefore, registerable in the DNS as a second-level domain, for example.

At block **216**, the technique determines the registration status of various second-level domains corresponding to the combination Punycode strings provided by block **214**. The registration status determination may be accomplished by registration engine **120** of FIG. **1**, for example. Registration engine **120** may receive from server computer **106** domain names generated from the combination Punycode strings of block **214** in Hypertext Transfer Protocol (HTTP) requests and return responses that include registration status and other registration information in JavaScript Object Notation (JSON) according to a REST protocol.

Note that the technique may determine the registration status of the combination Punycode strings as second-level domains for a variety of top-level domains. For example, the technique may determine the registration status of: [Punycode combination string].com, [Punycode combination string].net, [Punycode combination string].tv, [Punycode combination string].org, [Punycode combination string].int, [Punycode combination string].edu, [Punycode combination string].gov, [Punycode combination string].mil, or for [Punycode combination string] as the second-level domain combined with any country code top-level domain. Any other top-level domains are also contemplated. The particular top-level domains utilized in specific embodiments may depend on the top-level domains that are handled by registration engine **120**.

At block **218**, server computer **106** provides suggested domains and their registration status to client computer **102**. The providing may be through a web page provided by, or otherwise in communication with, server computer **106**, e.g., the same web page into which the user provided an input string. Alternately, or in addition, the suggestions and other information may be emailed to the user, or communicated using any of a variety of communication channels. The domains and their registration status may be presented in a table, for example.

FIG. **3** illustrates table **300** depicting an example of a partial output by server computer **106** to client computer **102** for the input string "happynation" and the language selection of Greek. A complete output may list every second-level domain that appears in Table 1 along with a variety of first-level domains (e.g., .com, .net, etc.). That is, a complete output may exhaustively list the statuses of every Punycode second-level domain as appearing in Table 1 joined to every top-level domain (or a selection thereof, e.g., .com, .net, etc.). Note that table **300** depicts two registered domains and one unregistered domain. An interested user may contact the registrants of the registered domains using the provided contact information in order to attempt to acquire the registered domains, for example. A user may proceed to register the unregistered domain.

FIGS. **4** and **5** illustrate tables depicting VCard portions of the example output of FIG. **3**, according to some embodi-

ments. In particular, as depicted in FIG. **3**, the two registered domain names, ευτυχισμένοςνατιον .com and χάππυέθνος .net, are depicted as having associated VCards. These VCards are represented as, respectively, FIG. **4**, VCard **400**, and FIG. **5**, VCard **500**. In some embodiments, the output data is formatted as depicted in FIG. **3**, with VCards embedded therein; in other embodiments, the VCards may be separately conveyed.

Some embodiments provide the user with the ability to register any unregistered domains (e.g., "χάππυνατιον .com" as appearing in FIG. **3**) directly within the system. For example, some embodiments provide a user interface through which a user of client computer **102** may register any suggested unregistered domains. The user interface may accept contact and other information (e.g., name server identification), as well as payment information, and register any selected unregistered suggested Punycode domain names. In some embodiments, the suggestions are presented in a table similar to table **300** of FIG. **3**, except that the table includes a column of buttons that a user may activate for unregistered domains in order to initiate the registration process. The registration process may be completed on the same web page using an additional interface configured to accept the necessary registration information (contact information, payment information, etc.). Such buttons may be "greyed out" in rows corresponding to registered domains.

Note that the blocks of FIG. **2** may be performed in any sensible order. For example, the actions of blocks **208** and **210** may be interchanged or merged in various embodiments.

Certain embodiments can be performed using a computer program or set of programs. The computer programs can exist in a variety of forms both active and inactive. For example, the computer programs can exist as software program(s) comprised of program instructions in source code, object code, executable code or other formats; firmware program(s), or hardware description language (HDL) files. Any of the above can be embodied on a transitory or non-transitory computer readable medium, which include storage devices and signals, in compressed or uncompressed form. Exemplary computer readable storage devices include conventional computer system RAM (random access memory), ROM (read-only memory), EPROM (erasable, programmable ROM), EEPROM (electrically erasable, programmable ROM), and magnetic or optical disks or tapes.

While the invention has been described with reference to the exemplary embodiments thereof, those skilled in the art will be able to make various modifications to the described embodiments without departing from the true spirit and scope. The terms and descriptions used herein are set forth by way of illustration only and are not meant as limitations. In particular, although the method has been described by examples, the steps of the method can be performed in a different order than illustrated or simultaneously. Those skilled in the art will recognize that these and other variations are possible within the spirit and scope as defined in the following claims and their equivalents.

What is claimed is:

1. A computer-implemented method of providing suggested domain names and registration statuses of the suggested domain names, the method comprising:

providing a network interface communicatively coupled to the internet;

receiving at the network interface an input string provided by a user;

receiving at the network interface a language selection provided by the user;

parsing, by an electronic processor, the input string into a plurality of words;

translating, by at least one electronic processor, each of the plurality of words into a language specified by the language selection, whereby a plurality of translated words are produced;

transliterating, by the at least one electronic processor, each of the plurality of words into the language specified by the language selection, whereby a plurality of transliterated words are produced;

generating, by the at least one electronic processor, a plurality of combinations of multiple words, each combination of multiple words of the plurality of combinations of multiple words comprising words selected from at least one of the plurality of translated words or at least one of the plurality of transliterated words;

generating, by the at least one electronic processor, a Punycode representation of at least one of the plurality of combinations of multiple words;

determining a domain name system (DNS) registration status of a domain name comprising the Punycode representation; and

providing to the user, by the network interface, the domain name comprising the Punycode representation and the DNS registration status of the domain name comprising the Punycode representation.

2. The method of claim **1**, wherein the DNS registration status indicates that the domain name comprising the Punycode representation is not registered.

3. The method of claim **2**, further comprising registering the domain name comprising the Punycode representation to the user.

4. The method of claim **1**, wherein the DNS registration status indicates that the domain name comprising the Punycode representation is registered, the method further comprising providing to the user, by the network interface, an identity of a registrant of the domain name comprising the Punycode representation.

5. The method of claim **4**, the method further comprising providing to the user, by the network interface, an expiration date of a DNS registration of the domain name comprising the Punycode representation.

6. The method of claim **1**, wherein the input string consists of American Standard Code for Information Interchange (ASCII) characters.

7. The method of claim **1**, wherein the network interface comprises a representational state transfer (REST) interface.

8. The method of claim **1**, wherein the language selection comprises a specific language that includes a plurality of non-English characters in its alphabet.

9. The method of claim **1**, wherein the at least one of the plurality of combinations of multiple words comprises words selected from both the plurality of translated words and the plurality of transliterated words.

10. The method of claim **1**, wherein the at least one of the plurality of combinations of multiple words comprises at least one translated word of the plurality of translated words and at least one transliterated word of the plurality of transliterated words, wherein the Punycode representation comprises a representation of the at least one translated word of the plurality of translated words and the at least one transliterated word of the plurality of transliterated words.

11. A system for providing suggested domain names and registration statuses of the suggested domain names, the system comprising:

a network interface communicatively coupled to the internet, the network interface configured to receive an input string provided by a user and receive a language selection provided by the user; and

at least one electronic processor configured to:

parse the input string into a plurality of words;

translate each of the plurality of words into a language specified by the language selection, whereby a plurality of translated words are produced;

transliterate each of the plurality of words into the language specified by the language selection, whereby a plurality of transliterated words are produced;

generate a plurality of combinations of multiple words, each combination of multiple words of the plurality of combinations of multiple words comprising words selected from at least one of the plurality of translated words or at least one of the plurality of transliterated words;

generate a Punycode representation of at least one of the plurality of combinations of multiple words; and

determine a domain name system (DNS) registration status of a domain name comprising the Punycode representation;

wherein the network interface is further configured to provide to the user the domain name comprising the Punycode representation and the DNS registration status of the domain name comprising the Punycode representation.

12. The system for providing suggested domain names of claim **11**, wherein the DNS registration status indicates that the domain name comprising the Punycode representation is not registered.

13. The system for providing suggested domain names of claim **12**, wherein the network interface is further configured to register the domain name comprising the Punycode representation to the user.

14. The system for providing suggested domain names of claim **11**, wherein the DNS registration status indicates that the domain name comprising the Punycode representation is registered, wherein the network interface is further configured to provide to the user an identity of a registrant of the domain name comprising the Punycode representation.

15. The system for providing suggested domain names of claim **14**, the network interface further configured to provide to the user an expiration date of a DNS registration of the domain name comprising the Punycode representation.

16. The system for providing suggested domain names of claim **11**, wherein the input string consists of American Standard Code for Information Interchange (ASCII) characters.

17. The system for providing suggested domain names of claim **11**, wherein the network interface comprises a representational state transfer (REST) interface.

18. The system for providing suggested domain names of claim **11**, wherein the language selection comprises a specific language that includes a plurality of non-English characters in its alphabet.

19. The system for providing suggested domain names of claim **11**, wherein the at least one of the plurality of combinations of multiple words comprises words selected from both the plurality of translated words and the plurality of transliterated words.

20. The system for providing suggested domain names of claim **11**, wherein the at least one of the plurality of combinations of multiple words comprises at least one translated word of the plurality of translated words and at least one transliterated word of the plurality of transliterated words, wherein the Punycode representation comprises a representation of the at least one translated word of the plurality of translated words and the at least one transliterated word of the plurality of transliterated words.

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