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(54) **Title**: METHOD FOR CUSTOMIZING TRANSLATION OF A COMMUNICATION BETWEEN LANGUAGES, AND ASSOCIATED SYSTEM AND COMPUTER PROGRAM PRODUCT

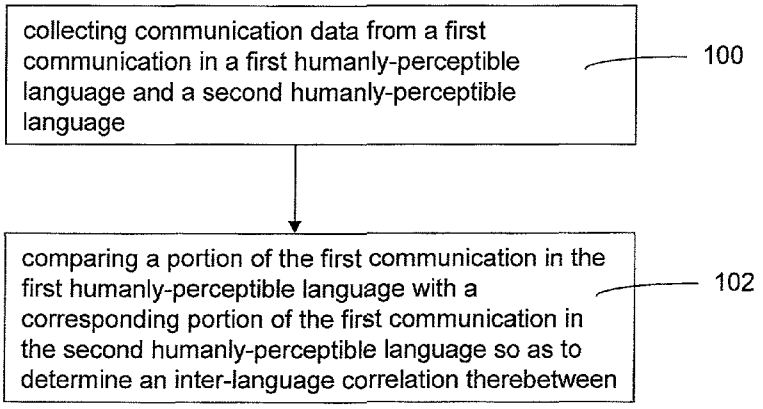

FIG. 3

(57) **Abstract**: A method is provided for customizing translation of a communication between humanly-perceptible languages. Such a method comprises associating personal information and/or demographic information of each of a translator and an intended recipient of a translated communication with a corresponding translation profile. Communication data provided by a user may also be analyzed to identify a preferred communication and/or language style of the user, including a native dialect of the user. The translation profile and/or identified communication/language style is then used to customize translations for the intended recipient in accordance with the intended recipient's preferences. Associated methods, systems and computer program products are also provided.

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METHOD FOR CUSTOMIZING TRANSLATION OF A COMMUNICATION BETWEEN LANGUAGES, AND ASSOCIATED SYSTEM AND COMPUTER PROGRAM PRODUCT

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] Embodiments of the present invention are generally directed to language translations and, more particularly, to a method for customizing translation of a communication between humanly-perceptible languages, and associated methods, systems and computer program products.

Description of Related Art

[0002] As the global economy continues to grow, interaction among entities speaking, comprehending, or otherwise understanding different languages continues to grow as well. For example, documents and/or communications (e.g., email, letters, etc.) may be transmitted between such entities, wherein such documents and/or communications must be either translated by a human-translator (typically employed by a translation service) or a machine (i.e., a computer device) before reaching an intended recipient. In general, human-translators provide more accurate and higher quality translations than their machine counterparts. However, translations performed by human-translators may often be slower and more costly than those performed by the machine translators. Also, translations may differ between individual translators due to, for example, skill level, personal and/or environmental characteristics, demographics, etc. Because of these factors, machine translations are typically considered the preferred translation method, especially when transmitting electronic communications such as email. However, there is a significant need for improved quality of such machine translations, wherein words/phrases may be, for example, mistranslated, translated out of context, translated according to "mechanistic" rules, or simply not translated by the machine translators.

[0003] In some instances, machine translators may employ rule-based translation schemes operating on rule-based translation dictionaries that perform translations based on a one-to-one matching of sentences, phrases, and/or words. One limitation of implementing such "mechanistic" rule-based translation dictionaries is that words may

have different translations depending on the context in which they are used, which may not be accounted for by rule-based translation schemes. To account for such context issues that may limit the effectiveness of rule-based translation schemes, machine translations may instead employ a statistical translation scheme based on statistical translation models/engines. However, such statistical translation models/engines typically lack sufficient quantities of data to build/enhance/train the translation models/engines. As such, entities interacting in the global economy may turn to the less consistent, less cost-efficient and less time-efficient method of employing a human-translator to appropriately translate a communication.

[0004] Thus, there exists a need for methods, systems, and/or computer program products which provide an improved and/or customized translation of a communication, while continuously improving the quality of a translation, in a consistent, time-efficient and cost-efficient manner.

BRIEF SUMMARY OF THE INVENTION

[0005] The above and other needs are met by embodiments of the present invention which, according to one aspect, provides method for customizing translation of a communication between a first humanly-perceptible language and a second humanly-perceptible language. Such a method comprises associating at least one of personal information and demographic information of each of a translator and an intended recipient of a translated communication with a corresponding translation profile, and translating a communication between a first humanly-perceptible language and a second humanly-perceptible language by the translator, at least partially based upon the translation profile of the translator corresponding to the translation profile of the intended recipient of the translated communication.

[0006] Another aspect of the invention provides a method for improving translation of a communication source from a first humanly-perceptible language to a second humanly-perceptible language. Such a method comprises providing a statement in a first humanly-perceptible language to an audience, soliciting a plurality of translations of the statement in a second humanly-perceptible language from the audience, and receiving the plurality of translations of the statement in the second humanly-perceptible language from the audience. A portion of the statement in the first humanly-perceptible language is compared with at least a corresponding portion of the plurality of translations in the second humanly-perceptible language so as to determine an inter-language correlation

between the first and second humanly-perceptible languages. The inter-language correlation determined from the statement is applied to translate a portion of a communication source between the first humanly-perceptible language and the second humanly-perceptible language.

[0007] Still another aspect of the present invention provides a method for facilitating customized translation of a communication between a first humanly-perceptible language and a second humanly-perceptible language. Such a method comprises associating at least one of personal information and demographic information of a translator with a translation profile. The translation profile is associated with a translation between a first humanly-perceptible language and a second humanly-perceptible language provided by the translator. An inter-language correlation is determined between the first humanly-perceptible language and the second humanly-perceptible language, at least partially based upon the translation profile of the translator. The inter-language correlation is applicable to translation between the first humanly-perceptible language and the second humanly-perceptible language of a communication for an intended recipient of the translated communication having a translation profile corresponding to the translation profile of the translator, wherein the translation profile of the intended recipient comprises at least one of personal information and demographic information of the intended recipient.

[0008] Another aspect of the present invention provides a method for facilitating customized translation of a communication between a first humanly-perceptible language and a second humanly-perceptible language. Such a method comprises analyzing communication data provided by a user so as to identify a preferred communication style of the user, the preferred communication style including a native dialect of the user. The preferred communication style of the user is associated with a translation between a first humanly-perceptible language and a second humanly-perceptible language. A correlation is determined between the first humanly-perceptible language and the second humanly-perceptible language, at least partially based upon the preferred communication style of the user. The correlation is applicable to communications directed to and from the user involving translation between the first humanly-perceptible language and the second humanly-perceptible language.

[0009] Yet another aspect of the present invention provides a method for facilitating text communication. Such a method comprises analyzing an original text to determine a language style associated therewith, and analyzing data associated with an intended

recipient of the original text to determine a language style associated with the intended recipient. The original text is converted from the language style associated therewith to the language style associated with the intended recipient prior to forwarding the converted original text thereto. In some instances, the method further comprises translating the original text from a first humanly-perceptible language to at least a second humanly-perceptible language, at least partially based on one of the language style associated with the original text.

[0010] Embodiments of the present invention thus provide significant advantages as further detailed herein.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S)

[0011] Having thus described the invention in general terms, reference will now be made to the accompanying drawings, which are not necessarily drawn to scale, and wherein:

[0012] FIG. 1 is a schematic of an exemplary computer device capable of translating a communication from a first human-perceptible language to at least a second human-perceptible language;

[0013] FIG. 2 is a schematic of an electronic communication translation system with an electronic communication being received by an appropriately-configured server device;

[0014] FIG. 3 is a chart illustrating a method for improving translation of a communication from a first humanly-perceptible language to a second humanly-perceptible language, in accordance with one embodiment of the present invention;

[0015] FIG. 4 is a chart illustrating another method for improving translation of a communication from a first humanly-perceptible language to a second humanly-perceptible language, in accordance with one embodiment of the present invention;

[0016] FIG. 5 is a chart illustrating yet another method for improving translation of a communication from a first humanly-perceptible language to a second humanly-perceptible language, in accordance with one embodiment of the present invention;

[0017] FIG. 6 is a chart illustrating still yet another method for improving translation of a communication from a first humanly-perceptible language to a second humanly-perceptible language, in accordance with one embodiment of the present invention;

[0018] FIG. 7 is a chart illustrating still another method for improving translation of a communication from a first humanly-perceptible language to a second humanly-perceptible language, in accordance with one embodiment of the present invention;

[0019] FIG. 8 is a chart illustrating a method for customizing translation of a communication between a first humanly-perceptible language and a second humanly-perceptible language, in accordance with one embodiment of the present invention;

[0020] FIG. 9 is a chart illustrating a method for facilitating customized translation of a communication between a first humanly-perceptible language and a second humanly-perceptible language, in accordance with one embodiment of the present invention;

[0021] FIG. 10 is a chart illustrating another method for facilitating customized translation of a communication between a first humanly-perceptible language and a second humanly-perceptible language, in accordance with one embodiment of the present invention; and

[0022] FIG. 11 is a chart illustrating a method for facilitating text communication, in accordance with one embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0023] The present invention now will be described more fully hereinafter with reference to the accompanying drawings, in which some, but not all embodiments of the inventions are shown. Indeed, these inventions may be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will satisfy applicable legal requirements. Like numbers refer to like elements throughout.

[0024] Embodiments of the present invention are directed to methods, systems, and computer program products capable of improving and/or customizing translations of communications such as electronic documents, electronic communications (e.g., e-mails, instant messages, text messages, or the like), and other forms of interaction (text or oral). For example, an email communication transmitted between entities communicating in different languages, or having different language preferences, may need to be translated before the email communication reaches the intended recipient. In such an instance, the sender of the email communication may require a certain confidence that the email communication has been accurately translated by a machine translator with an appropriate level of quality.

[0025] In general, the methods, systems, and computer program products disclosed herein provide different mechanisms for improving and/or customizing translation of a communication by collecting translation data and/or other additional translation material on a continuous, semi-continuous, iterative or batchwise basis, and incorporating such translation data / additional translation material into a translation engine/model which, in some instances, may be a statistical translation model. In such a manner, the translation data / additional translation material provides the engine/model with a further improved basis (i.e., further refined statistics) for application to future translations of communications. Such translation data / additional translation material may take many different forms, including, but not limited to, user-generated feedback, reference translations and/or dictionary editing. User-generated feedback can include information from surveys, as well as comments reflecting translation errors (or providing translation evaluations) and corrected translations. Reference translations are translations that have been validated as accurate and/or preferred. Such, reference translations may be useful, for example, in building or enhancing statistical translation models/engines and, in some instances, may be weighted more heavily than other translation data / additional translation material to reflect this relatively higher value. Dictionary editing is a general term that can include both modifications to a translation dictionary/database as well as the creation of the dictionary/database itself. Further, such editing can be done manually by humans, or automatically, through the use of, for example, scoring and weighting algorithms. Because some translation engines may need to be rebuilt / restructured in order to incorporate such new translation material, and because such rebuilding / restructuring can take time, edits / updates / modifications to such dictionaries may more effectively be done in a batch processing mode.

[0026] As previously discussed, machine translations, which facilitate translation through non-human translators (i.e., translations are completed by a computer device or an otherwise automated device) may often be the preferred method for translating documents and/or communications due to, for example, time and cost restraints as well as overall efficiency. Such machine translations may be generally limited in their application due to, for example, a lack of translation data for supporting the translation engine and/or lack of a mechanism for receiving feedback for improving the translation engine employed by the machine. As such, low-quality, incomplete, or otherwise insufficient translations may result from such "conventional" machine translations. Further, words/phrases translated by a machine translator may be, for example, taken out

of context when translated or, in other instances, not translated at all because the word/phrase is not recognized or otherwise understood by the translation scheme/engine/model. In this regard, the methods, systems, and computer program products disclosed herein are generally directed toward improving and/or customizing translations of communications by opportunistically collecting/extracting translation data so as to provide a continually improved basis on which to build/train/enhance the translation model/engine associated with a machine translator. Such machine translations may be accomplished by, for example, a computer device executing an appropriate computer program product. For purposes of this discussion, it is recognized and understood that the term 'computer device' includes, but is not limited to, desktop and laptop computers, as well as cellular phones, personal digital assistants (PDA), and other electronic devices, both portable and non-portable, having processing capabilities.

[0027] As an example, it may be desirable to improve a machine translation such that translated documents can be transmitted between professional entities (e.g., law firms) with a high level of confidence that the document has been translated in a manner sufficient to accurately convey the information contained therein. In other instances, it may be desirable to customize a machine translation to account for a user's native dialect such that a personalized translation is provided to that user. In any instance, improved and/or customized translations that provide higher quality and more accurate results, particularly when implemented in a machine translator, are needed for a fast-paced and global economy unwilling to wait and/or compensate for a human-translation of a document or other communication.

[0028] Such machine translations may be accomplished, as shown, for example, in FIG. 1, with respect to a computer device 10, wherein the computer device 10 may be, for example, a laptop/desktop computer, a cellular phone, a PDA, or other electronic device having processing capabilities. In this regard, a communication in a first human-perceptible language may be inputted into the computer device 10 with an input device 12, such as, for example, a keyboard, an auditory input device (e.g., a microphone) in communication with voice-recognition software, or any other suitable input device. In some instances, the communication may be received by the computer device 10 from another computer device 10. In any instance, the communication may be entered into or otherwise received by a translation scheme/engine/model embodied as a computer program product 14 associated with and executable by the computer device 10.

[0029] In some instances, the translation scheme/program 14 may be locally stored and executed on the computer device 10, while in other instances the translation scheme/program 14 may be hosted or otherwise associated with a website accessible via a network, such as the Internet. In such instances, the communication may be submitted in the first human-perceptible language for translation at the website and, in return, a translation thereof in a second human-perceptible language is subsequently provided. In any instance, the translation scheme/program 14 may employ a translation model/engine, such as a statistical translation model, configured to translate and/or otherwise manipulate the communication between the first humanly-perceptible language and a second humanly-perceptible language. That is, in one aspect, the translation scheme/program may utilize a statistical machine translation (SMT) system to translate the content of the communication, though one skilled in the art will appreciate that other translation systems/schemas may also be implemented, whether statistically based or not. The translated communication may then be outputted to or via an output device 16, such as, for example, a computer screen interface, a printer device, an audio device, a tactile device or any other appropriate output device.

[0030] In some instances, the translation of the communication may occur before, during, or after transmission of an electronic communication (email, text message, instant message, etc.) or an electronic document. In such instances, the translation program/scheme 14 may be associated with an email platform/computer program product. Transmission of the electronic communication may be typically accomplished, as shown, for example, in FIG. 2, with respect to an electronic communication system 1 wherein one or more first computer devices 10 are capable of communicating through a first server device 20, over a communications network 50 and through a second server device 25, with one or more second computer devices 75. The translation process may be seamless and invisible to both user and recipient, possibly with the exception of the automatic inclusion of the source-language communication ("original communication/document" in the first humanly perceptible language) in the message received by the recipient (whereby the recipient may receive both the original communication/document and the translated communication/document) and the destination-language text ("translated communication/document" in the second humanly-perceptible language) received by the sender (whereby the sender may receive the translated communication/document for confirmation of the extent and nature of the translation). For purposes of this discussion herein, it is recognized and understood that

the term 'computer network' includes, but is not limited to, computers connected via networks such as the Internet and similar protocols, as well as computers, cellular phones and other electronic devices connected via wireless and/or wireline networks. It is further recognized and understood that the term 'wireless networks' can include cellular, wideband, satellite and any other system using electromagnetic radiation for the purpose of communication.

[0031] In any instance, in order to facilitate the improved/customized translation process disclosed herein, embodiments of the present invention may be based on a translation scheme built, enhanced, and/or trained by incorporation and recognition of a relatively large amount of translation data received in a continuous, semi-continuous and/or batchwise manner. That is, a translation model/engine, such as a statistical translation model/engine, may be improved, enhanced, and/or customized by increasing the quantity of translation data incorporated therein on which the engine can base future translations. According to embodiments of the present invention, such translation data may be, for example, personal in nature (i.e., based on demographics of a person seeking a translation), or based in the collection of translation information from text, documents, or other content translated into different humanly-perceptible languages by various sources to create inter-language or other correlations that may be used for translations of communications.

[0032] Previously, some translation models/engines were derived from text content obtained from proceedings of international political entities such as, for example, the European Parliament and the United Nations, due to the availability of quantities of corresponding information in multiple languages. However, the translation models/engines derived from such content sources may be context-specific (i.e., based on a single "domain" such as a political proceeding). That is, such translation models/engines would be derived from translated information specific to a context or domain directed to diplomatic/political issues and/or other issues particularly discussed by the European Parliament or the United Nations, while in session. To that end, such prior translation models/engines may have been adequate to translate text content produced from proceedings of the European Parliament or the United Nations. However, when applied to communications involving other contexts or "domains" (i.e., sports, military, medicine, etc.), such prior translation models/engines were not necessarily able to identify or adapt to the difference in context and, as such, may have provided less-than-adequate translations of communications in other contexts or domains.

[0033] Accordingly, some embodiments of the present invention are directed to compiling/collecting general domain content (i.e., over many domains / contexts) that may be parsed, analyzed, and applied across various specific domains to provide improved and/or customized translations in a particular domain, rather than collecting and applying translation data specific to a particular domain and applying that data to any and all domains. In one aspect of the present invention, a method for improving translation of a communication is provided, wherein the communication may be, for example, a document, an email, a text message, an instant message, text content, oral content (i.e., received via a voice recognition computer program product) or any other communicative message.

[0034] As shown in FIG. 3, such a method may comprise collecting communication data from a first communication in a first humanly-perceptible language and a second humanly-perceptible language, as represented by step 100. For example, a literary text/document/work may often be published or otherwise made available in multiple languages. As such, these literary works may provide substantial quantities of translation data that may be used, in accordance with the embodiments of the present invention, to compile translation data associated with a general context/domain that can be used to enhance/train/build translation models/engines, such as a statistical translation model. Such a method may further comprise comparing a portion of the first communication in the first humanly-perceptible language with a corresponding portion of the first communication in the second humanly-perceptible language so as to determine an inter-language or other correlation between the first and second humanly-perceptible languages, as represented by step 102. In this manner, the inter-language correlation may be applicable to translate a portion of a second communication between the first humanly-perceptible language and the second humanly-perceptible language. In some instances, the inter-language correlation may be, for example, a statistical translation model of a statistical machine translator.

[0035] In one exemplary embodiment, a literary work published or otherwise available in a first humanly-perceptible language and a second humanly-perceptible language may be scanned using an appropriate scanner device such that the text content thereof may be converted into appropriate code usable by a computer device through, for example, optical character recognition technology, as understood by one having skill in the art. A verification/evaluation program associated with the computer device may also be used to determine the accuracy of the scanned, extracted, or otherwise converted text

content. In some instances, the verification program may also be used to automatically correct any scanning errors, including, for example, those associated with the optical character recognition. The text content determined from each language version of the single literary work published in the first and second humanly-perceptible languages may be appropriately correlated using a computer algorithm or other appropriate procedure such that corresponding portions of the text content of the work in the first and second humanly-perceptible languages are capable of being compared to create an inter-language correlation. Such a correlation may involve a word-to-word correspondence, as well as, for example, a grammar-, a context-, and/or a structural correspondence.

[0036] In some instances, at least a portion of the literary work in the first humanly-perceptible language and/or the second humanly-perceptible language may be compared with a corresponding language reference model (i.e., a recognized standard or a generally-accepted dictionary) so as to determine an accuracy of the literary work in the respective humanly-perceptible language. The communication data and/or inter-language correlation may be accessible to or otherwise associated with a translation model/engine, such as a statistical translation model/engine, such that the communication data and/or inter-language correlation is applicable to a translation of a second communication, which may be subsequently submitted for translation, for example, to a computer device executing a computer program product configured to provide the translation, to an Internet website, or via a computer network, as described previously. In any instance, the translation information collected from the literary work published in the first and second humanly-perceptible languages can be converted, extracted, manipulated, and applied to enhance a translation model/engine such that subsequent translations are, for example, improved, more accurate, and generally of a higher quality. While reference has been made to a literary work, it will be understood that such a communication used for collecting the translation data and other communication data may be any type of work having content, including, but not limited to, books, journals, documents, and the like.

[0037] In another aspect of the present invention, a method for improving translation of a communication between a first humanly-perceptible language and a second humanly-perceptible language is provided. As shown in FIG. 4, such a method may comprise providing a statement in a first humanly-perceptible language to an audience (step 200), and soliciting a translation of the statement from the audience in a second humanly-perceptible language and receiving the translation (step 202). In one

embodiment, a statement may be made available, for example, via a website associated with a translation service hosting a translation model/engine as disclosed herein. In such instances, users of the website may, for example, indicate all languages in which they are fluent and can confidently provide translations, wherein such capabilities may be associated with a user profile. The users may access or otherwise be provided a statement(s), such as, for example, movie subtitles (which may be considered a proxy for conversational speech), television program scripts, music lyrics, or legal documents, for translation by such users from a first humanly-perceptible language to a second humanly-perceptible language, presuming that the users have at least some proficiency in the two languages. In this manner, a translation of the statement is solicited from various members of the audience (users), and any such translations provided by users are received by the website from the audience. In some instances, upon submission of the translation, a user may be presented with a subsequent statement for translation, wherein the user may potentially submit a limited or unlimited number of translations. A verification program may be implemented, in some instances, to verify the accuracy or level of sufficiency with respect to the translations provided by the audience, wherein only those translations confirmed as meeting a predetermined threshold criteria may be used to enhance/train/build the translation model/engine.

[0038] After submitting the translation, the statement in the first humanly-perceptible language (i.e., the statement to be translated) may be compared with a corresponding portion of the statement in the second humanly-perceptible language (i.e., the statement as-translated) so as to determine an inter-language or other correlation between the first and second humanly-perceptible languages, as represented by step 204. Such an inter-language correlation may be applicable to translate a further communication between the first humanly-perceptible language and the second humanly-perceptible language. Such embodiments of the present invention also serve to increase the quantity of translation data available to the translation model/engine, which, in turn, may serve to enhance the translation model/engine and improve the quality, accuracy, and efficiency of subsequent translations. Furthermore, this approach may allow for development of domain specific correlations or dictionaries, as used such machine translators, to provide high accuracy and sufficiency translations of communications specific to a particular domain such as, for example, law, medicine, and military.

[0039] In yet another aspect of the present invention, a method for improving translation of a communication between a first humanly-perceptible language and a

second humanly-perceptible language is provided. As shown in FIG. 5, the method may comprise soliciting one of a translation of a first communication, in a first humanly-perceptible language, between the first humanly-perceptible language and a second humanly-perceptible language, and an evaluation of the first communication in the second humanly-perceptible language, from a translator and receiving the one of the translation and the evaluation, as represented by step 300. That is, in some instances, a member of an audience may submit or otherwise provide a statement to, for example, a website for translation by a human-translator between a first humanly-perceptible language and a second humanly-perceptible language. In other instances, the member of the audience may submit or otherwise provide a statement to the human-translator in the second humanly-perceptible language for evaluation of the accuracy of the correlation with the statement with respect to the first humanly-perceptible language. That is, the member of the audience may either solicit translation of the statement from a human-translator or solicit verification or other evaluation that a translation is accurate, wherein the human-translator may provide corrections or other comments as needed.

[0040] Accordingly, the translated or evaluated statement in the second humanly-perceptible language may be compared to the statement in the first humanly-perceptible language for determination of an inter-language or other correlation between the first and second humanly-perceptible languages, as represented by step 302. Such a correlation may be used to enhance/build/train a translation model/engine such that the correlation may be applicable to translation of a second communication between the first humanly-perceptible language and the second humanly-perceptible language. That is, as more translation data is collected from the translated statements, the evaluated statements, and/or the evaluations, the translation model/engine incorporating such data can continually improve the quality and accuracy of translations provided thereby.

[0041] In still yet another aspect of the present invention, a method for improving translation of a communication between a first humanly-perceptible language and a second humanly-perceptible language is provided. As shown in FIG. 6, the method may comprise collecting communication data from a first communication in a first humanly-perceptible language and a second humanly-perceptible language and associating the communication data with a general domain or context, as represented by step 400. For example, content of the first communication available in the first and second humanly-perceptible languages may be collected and stored in, for example, a first content repository associated with a general domain or context, wherein the content in the first

content repository extends across various domains or contexts such as, for example, law, medicine, and military (i.e., the content is collected in connection with various scenarios).

[0042] The communication data may be evaluated with respect to a domain threshold criteria, as represented by step 402. For example, the communication data may be scored against a domain- or context-specific reference by using a computer algorithm. In such a manner, some or all of the communication data can be associated with one or more particular domains or contexts if respective threshold correlations can be determined. A portion of the above-threshold communication data in the first humanly-perceptible language may then be compared with a corresponding portion of the above-threshold communication data in the second humanly-perceptible language so as to determine a specific domain or contextual correlation between the first and second humanly-perceptible languages, as represent by step 404. In some instances, the above-threshold communication data in the first humanly-perceptible language and/or the above-threshold communication data in the second humanly-perceptible language may be compared with a corresponding specific domain reference so as to evaluate the first communication against the respective humanly-perceptible language. That is, the communication may be evaluated against a reference or standard to measure the accuracy of the inclusion of the communication in the specific domain or context.

[0043] In an exemplary embodiment, the first communication associated with the first content repository may be compared against a predetermined threshold criteria for inclusion in a second content repository associated with a specific domain. That is, if the content of first communication is, for example, determined to be law-related, then it will be included in the translation data associated with the translation model/engine specific for translating a second communication determined to be associated with the domain of law, which may be accomplished using, for example, computer algorithms for scoring and/or weighting the translations. In contrast, if the content of the first communication is, for example, determined to be medical-related, then it would not be recognized by the translation model/engine specific as being associated with the domain of law, but would instead be included with the translation data associated with the translation model/engine as being specific to the domain of medicine. In this manner, domain specific information may be filtered from the general domain repository to create specific domain repositories used to enhance/build/train a translation model/engine for translations of communications determined to belong in a particular domain or context.

[0044] According to a further aspect of the present invention, a method for improving translation of a communication between a first humanly-perceptible language and a second humanly-perceptible language is provided, wherein the first and second humanly-perceptible languages are associated with a common character script. Such an approach may be particularly useful for translating a communication between a Latin character-based script, such as, for example, English, French, and Spanish, and a non-Latin character-based script such as, for example, Chinese, Japanese, and Greek.

[0045] Previous translation schemes/programs have required that the communication to be translated be provided in a traditional script (i.e., traditional Chinese, Japanese, or Greek script) or, alternatively, translated to the traditional script. This can be problematic in that inputting the traditional script into a computer device employing a translation scheme/program requires the use of a keyboard device utilizing the traditional script. However, some native speakers of a non-Latin character based foreign language may use a computer device utilizing a Latin character-based keyboard (i.e., a so-called "QWERTY" keyboard or equivalent, where English characters form the basis of the communication written in a non-English language). In such instances, native speakers of the traditional script may type in the Latin-based script, wherein the traditional script can be transcribed to the Latin character-based script, for example, in a phonetic to the traditional script in the Latin character-based script. However, as mentioned previously, prior translation schemes/programs may not recognize or comprehend the transcribed text (i.e., a non-English communication phonetically or otherwise represented by English character script) and, thus, may require, for example, the use of multiple or multi-function keyboard devices (i.e., an additional keyboard may be implemented utilizing the traditional script such that the user could submit text in the traditional script for translation).

[0046] As an example, a string of Japanese characters may represent a word/phrase that can be spelled out / transcribed phonetically into Latin-based characters, by using a QWERTY or equivalent keyboard device. Such a transcription would not necessarily be recognized by prior translation schemes/programs. Thus, a user seeking translation of the Japanese characters would need a keyboard device utilizing traditional Japanese characters/script. In this manner, it would be advantageous to provide a translation scheme/program capable of receiving the transcribed text for translation or, alternatively, translating to the transcribed text (rather than the traditional script). Accordingly, the first and second humanly-perceptible languages may be related through a common

character script, such as, for example, the Latin character-based script, associated with both.

[0047] In some embodiments of the present invention, as shown in FIG. 7, such a method may comprise receiving a text communication comprising the common character script arranged according to a first humanly-perceptible language, as represented by step 500. The common character script of the text communication may be correlated with communication data in the first humanly-perceptible language, as represented by step 502 (i.e., the script of the communication correlated with a particular humanly-perceptible language). In some instances, the communication data may be collected by transcribing content from a first character-based script to a second-character based script, and then translating the content provided in the second character-based script from the first humanly-perceptible language to the second humanly perceptible language. For example, content provided in a Latin character-based script, though still in Japanese language and representing Japanese script, may be transcribed to or otherwise correlated with traditional Japanese script. After the transcription, the content may then be considered as being provided in the Japanese character script, wherein the transcribed content may then be translated from a first humanly-perceptible language (i.e., Japanese) to a second humanly-perceptible language (i.e., English). As an example, the content may be translated from the Japanese language (provided in the non-traditional script) to, for example, the English language. Alternatively, the content may be first provided in the English language and then translated to the Japanese language, possibly in the non-traditional Latin character-based script, wherein the content may then be transcribed to traditional Japanese script, if desired.

[0048] The correlated communication data in the first humanly-perceptible language may be compared with corresponding communication data in a second humanly-perceptible language so as to determine a correlation between the common character script of the text communication arranged according to the first humanly-perceptible language and the second humanly-perceptible languages, as represented by step 504. That is, the transcribed text may be compared with the translated text to determine a correlation therebetween. For example, the non-traditional Japanese text (i.e., in the Latin character-based script) may be compared with the translated text provided in the English language to determine the correlation therebetween. The correlation may then be applicable to translate a portion of a second text communication comprising the

common character script arranged according to the first humanly-perceptible language and the second humanly-perceptible language.

[0049] According to yet another aspect of the present invention, a method for customizing translation of a communication between a first humanly-perceptible language and a second humanly-perceptible language is provided. As shown in FIG. 8, the method may comprise associating at least one of personal information and demographic information of each of a translator and an intended recipient of a translated communication with a corresponding translation profile, as represented by step 600. In such a manner, the translations provided by the translator or received by the intended recipient may have such personal and/or demographic information associated therewith. In some embodiments, the translator and/or intended recipient may be solicited for information (which may be accomplished, for example, via a website or a computer network) pertaining to personal and/or demographic information thereof, such as, for example, language preferences, geographic location, age, occupation/profession, etc., which can then be associated with a name, email address, or other identifier of the translator / intended recipient for associating the personal and/or demographic information therewith. In such a manner, user or translation profile is created.

[0050] Such a method may further comprise translating a communication between a first humanly-perceptible language and a second humanly-perceptible language by the translator, at least partially based upon the translation profile of the translator corresponding to the translation profile of the intended recipient of the translated communication (i.e., at least some commonality between the profiles of the translator and the intended recipient), as represented by step 602. That is, the match between the translator and intended recipient profiles is utilized to customize or specifically tailor the translation to the preferences of the intended recipient (i.e., the translator exhibits common characteristics with the intended recipient). For example, a communication may, in some instances, be transmitted in a first humanly-perceptible language by email such that the intended recipient receives the communication in the second humanly-perceptible language, with the translated communication having additional adjustments/modifications thereto so as to account for the preferences associated with the translation profile or other particular characteristics of the recipient. Thus, the communication may be tailored to the particular preferences or context/domain/demographic of the intended recipient. Similarly, when a translator submits a translation, the translator profile associated with the translator may be utilized

to associate the translation with particular profile fields or preferences or characteristics associated therewith.

[0051] According to still another aspect of the present invention, a method for facilitating customized translation of a communication between a first humanly-perceptible language and a second humanly-perceptible language is provided. As shown in FIG. 9, the method may comprise associating at least one of personal information and demographic information of a translator with a translation profile, as represented by step 700. For example, a translator may be solicited for information (which may be accomplished, for example, via a website or computer network) pertaining to personal and/or demographic information thereof, such as, for example, language preferences, geographic location, age, occupation/profession, etc., which can then be associated with the translator to create the particular translator's profile. Such a method may further comprise associating the translation profile with a translation between a first humanly-perceptible language and a second humanly-perceptible language provided by the translator, as represented by step 702. That is, a translation provided by the translator may be associated with the translation profile so as to form a correlation therebetween (i.e., domain- or context-specific).

[0052] Such a method may further comprise determining an inter-language correlation between the first humanly-perceptible language and the second humanly-perceptible language, at least partially based upon the translation profile of the translator, as represented by step 704. In such a manner, the translation provided by the translator may be appropriately associated with the characteristics of that translator's profile. Accordingly, the profile-correlated translation may then be used for building and/or enhancing a translation model/engine such that a personalized translation can be provided to persons seeking translations, where such persons would have similar profiles/preferences/characteristics as the translator. That is, the inter-language correlation may further be applicable to translation between the first humanly-perceptible language and the second humanly-perceptible language of a communication for an intended recipient of the translated communication, wherein the intended recipient has a translation profile corresponding to the translation profile of the translator (for example, where the translation profile of the intended recipient comprises personal information and/or demographic information of the intended recipient, which corresponds with the personal/demographic information associated with the translator).

[0053] In an exemplary embodiment, an individual may be in the legal profession and, as such, may have a translation profile exhibiting such information. Accordingly, a translation submitted by the individual is associated with the legal profession such that the translation may be used to build/enhance/train a translation model in the specific domain or context of law. In this manner, the translator-specific information and translation data associated with translations provided by the individual may be used for customizing future translations, as performed by the computer device, of communications determined to be law-related.

[0054] According to another aspect of the present invention, a method for facilitating customized translation of a communication between a first humanly-perceptible language and a second humanly-perceptible language is provided. As shown in FIG. 10, the method may comprise analyzing communication data provided by a user so as to identify a preferred communication style of the user, wherein the preferred communication style includes, for example, a native dialect of the user, as represented by step 800. Such an approach may account for an individual's unique style of communication (driven by surroundings, home environment, education, etc.) and vocabulary in which the individual is most comfortable communicating. As such, embodiments of the present invention may be provided so as to permit the individual to send and receive communications in the native dialect and/or preferred communication style that takes into account, for example, the individual's background, native dialect, area of a particular country, etc.

[0055] In some instances, the individual may be solicited for information such that a native dialect and/or a preferred style of communication thereof may be identified. In other instances, previous communications, such as, for example, email correspondence, may be used to identify the same or similar information of that individual. In any instance, analysis of this information to determine, for example, the native dialect or preferred style of communication may be based on computational linguistics techniques, such as, for example, Hidden Markov Models and n-gram probabilities. In some instances, an individual's profile may be continually refined by intermittently requesting or otherwise determining additional information therefrom after the initial solicitation.

[0056] Such a method may further comprise associating the preferred communication style of the user with a translation between a first humanly-perceptible language and a second humanly-perceptible language, as represented by step 802. By associating the preferred style of the individual with the translation, the translation may be tailored to the preferences thereof, and may be applicable to both inter-language and

intra-language "translations"). For example, if it is determined that the user prefers a southern U.S. dialect, then communications received by the individual can be modified to adjust certain words/phrases to the user-preferred southern U.S. dialect in which the user is more comfortable communicating. Conversely, communications sent by the individual can be recognized as including a southern U.S. influence, and this factor can be taken into account when providing a translation of the communication for an intended recipient, whether preferring such a southern U.S. dialect or not. Such a method may further comprise determining a correlation between the first humanly-perceptible language and the second humanly-perceptible language, at least partially based upon the preferred communication style of the user, as represented by step 804. The correlation may be applicable to communications directed to and from the user involving translation between the first humanly-perceptible language and the second humanly-perceptible language.

[0057] According to still yet another aspect of the present invention, a method for facilitating text communication is provided. Such a method may be utilized to translate text communications between different styles, wherein the text communications may include, for example, emails, documents, attachments, and any other textual content. For example, an email communication written in an informal style may need to be converted into a professional style before reaching an intended recipient. In such instances, the converted style may be highly or entirely predicated on the preferences of the intended recipient. Furthermore, such an approach may be particularly useful for stylistic translations of real-time communications across agencies, wherein each agency has a different communication protocol and language specific thereto. For example, sharing of information across government agencies, such as, for example, between the Federal Bureau of Investigation and the Central Intelligence Agency, has becoming increasingly important in combating terrorism within the United States. Accordingly, embodiments of the present invention may be useful in stylistically translating communications between the agencies such that they may be capable of more effectively and efficiently responding to real-time information. In some instances, translation models may be built/trained to accomplish such stylistic translations, as similarly performed by translation models/engines configured to translate between and/or within languages.

[0058] As shown in FIG. 11, such a method may comprise analyzing an original text to determine a language style associated therewith, as represented by step 900. As mentioned previously, the style may include, but is not limited to, formal, informal,

professional, or any other style of text, grammar, etc. In some instances, the style of the original text may be determined by an appropriate computer algorithm or other analytic software. Such a method may further comprise analyzing data associated with an intended recipient of the original text to determine a language style associated with the intended recipient, as represented by step 902. That is, a style may be associated with the intended recipient such that the original text is stylistically translated to the preference of the intended recipient. Such a preference may be indicated by either the sender or the intended recipient. In any instance, such preferential data may be associated with the intended recipient so as to ensure the original text is communicated in the appropriate manner.

[0059] Such a method may further comprise converting the original text from the language style associated therewith to the language style associated with the intended recipient prior to forwarding the converted original text thereto, as represented by step 904. In some instances, the original text may be translated from a first humanly-perceptible language to at least a second humanly-perceptible language, at least partially based on one of the language style associated with the original text and the preferred style of the intended recipient. That is, in some instances, the original text may be translated between different styles as well as different languages during transmission of the original text.

[0060] Many modifications and other embodiments of the inventions set forth herein will come to mind to one skilled in the art to which these inventions pertain having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. For instance, certain embodiments are premised on the communication being available in a humanly perceptible language, non-inclusively such as Belarusian, Bulgarian, Czech, Chinese, Danish, Dutch, English, French, German, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Romanian, Russian, Serbo-Croatian, Slovak, Spanish, Swedish, and Ukrainian. However, in some instances, the source and destination languages used with the communication network may be languages that are not humanly perceptible, for example, where communication is between machines operating on different protocols. Of course, the systems and methods disclosed herein may also have and/or require associated computer program products for accomplishing the necessary functionality, and such is considered to be within the scope of the present invention, as will be appreciated by one skilled in the art. Therefore, it is to be understood that the inventions are not to be limited to the specific embodiments

disclosed and that modifications and other embodiments are intended to be included within the scope of the appended claims. Although specific terms are employed herein, they are used in a generic and descriptive sense only and not for purposes of limitation.

THAT WHICH IS CLAIMED:

1. A method for customizing translation of a communication between a first humanly-perceptible language and a second humanly-perceptible language, comprising:

associating at least one of personal information and demographic information of each of a translator and an intended recipient of a translated communication with a corresponding translation profile; and

translating a communication between a first humanly-perceptible language and a second humanly-perceptible language by the translator, at least partially based upon the translation profile of the translator corresponding to the translation profile of the intended recipient of the translated communication.

2. A method for facilitating customized translation of a communication between a first humanly-perceptible language and a second humanly-perceptible language, comprising:

associating at least one of personal information and demographic information of a translator with a translation profile;

associating the translation profile with a translation between a first humanly-perceptible language and a second humanly-perceptible language provided by the translator; and

determining an inter-language correlation between the first humanly-perceptible language and the second humanly-perceptible language, at least partially based upon the translation profile of the translator, the inter-language correlation being applicable to translation between the first humanly-perceptible language and the second humanly-perceptible language of a communication for an intended recipient of the translated communication having a translation profile corresponding to the translation profile of the translator, the translation profile of the intended recipient comprising at least one of personal information and demographic information of the intended recipient.

3. A method for facilitating customized translation of a communication between a first humanly-perceptible language and a second humanly-perceptible language, comprising:

analyzing communication data provided by a user so as to identify a preferred communication style of the user, the preferred communication style including a native dialect of the user;

associating the preferred communication style of the user with a translation between a first humanly-perceptible language and a second humanly-perceptible language; and

determining a correlation between the first humanly-perceptible language and the second humanly-perceptible language, at least partially based upon the preferred communication style of the user, the correlation being applicable to communications directed to and from the user involving translation between the first humanly-perceptible language and the second humanly-perceptible language.

4. A method for facilitating text communication, comprising:

analyzing an original text to determine a language style associated therewith;

analyzing data associated with an intended recipient of the original text to determine a language style associated with the intended recipient; and

converting the original text from the language style associated therewith to the language style associated with the intended recipient prior to forwarding the converted original text thereto.

5. A method according to Claim 4, further comprising translating the original text from a first humanly-perceptible language to at least a second humanly-perceptible language, at least partially based on one of the language style associated with the original text.

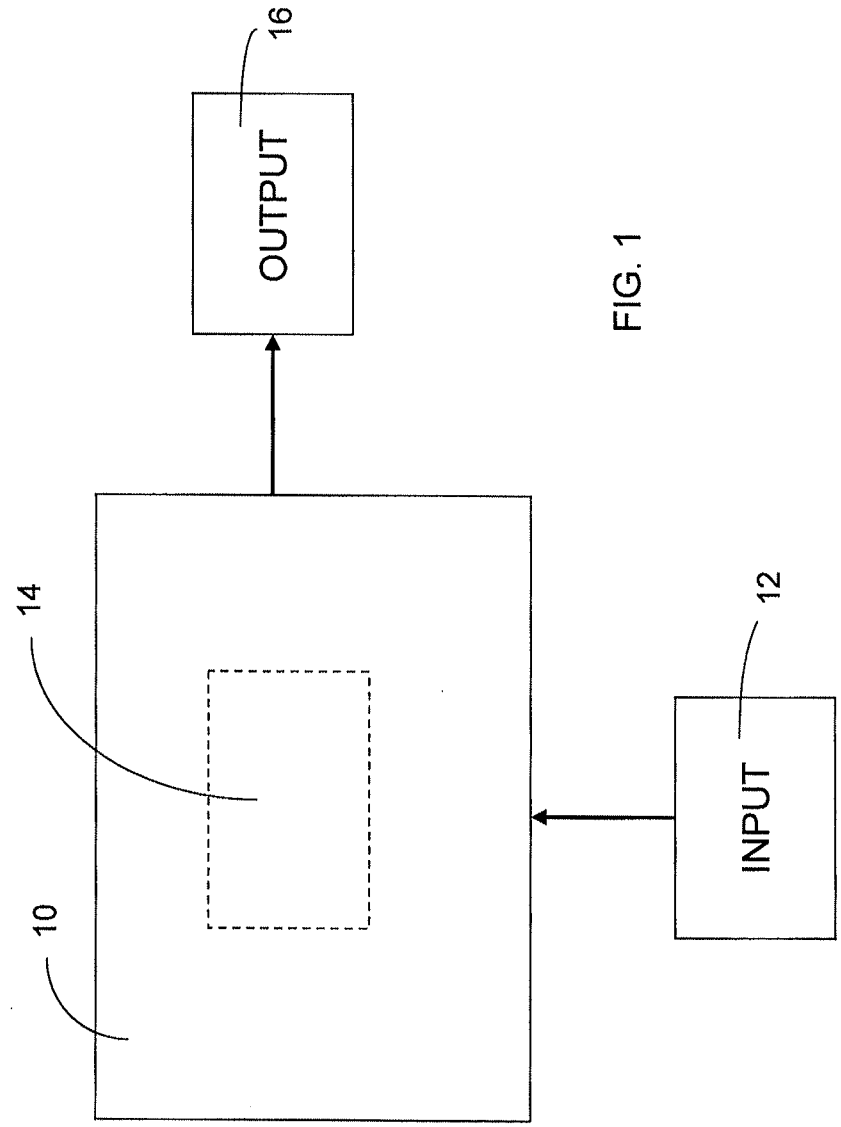

FIG. 1

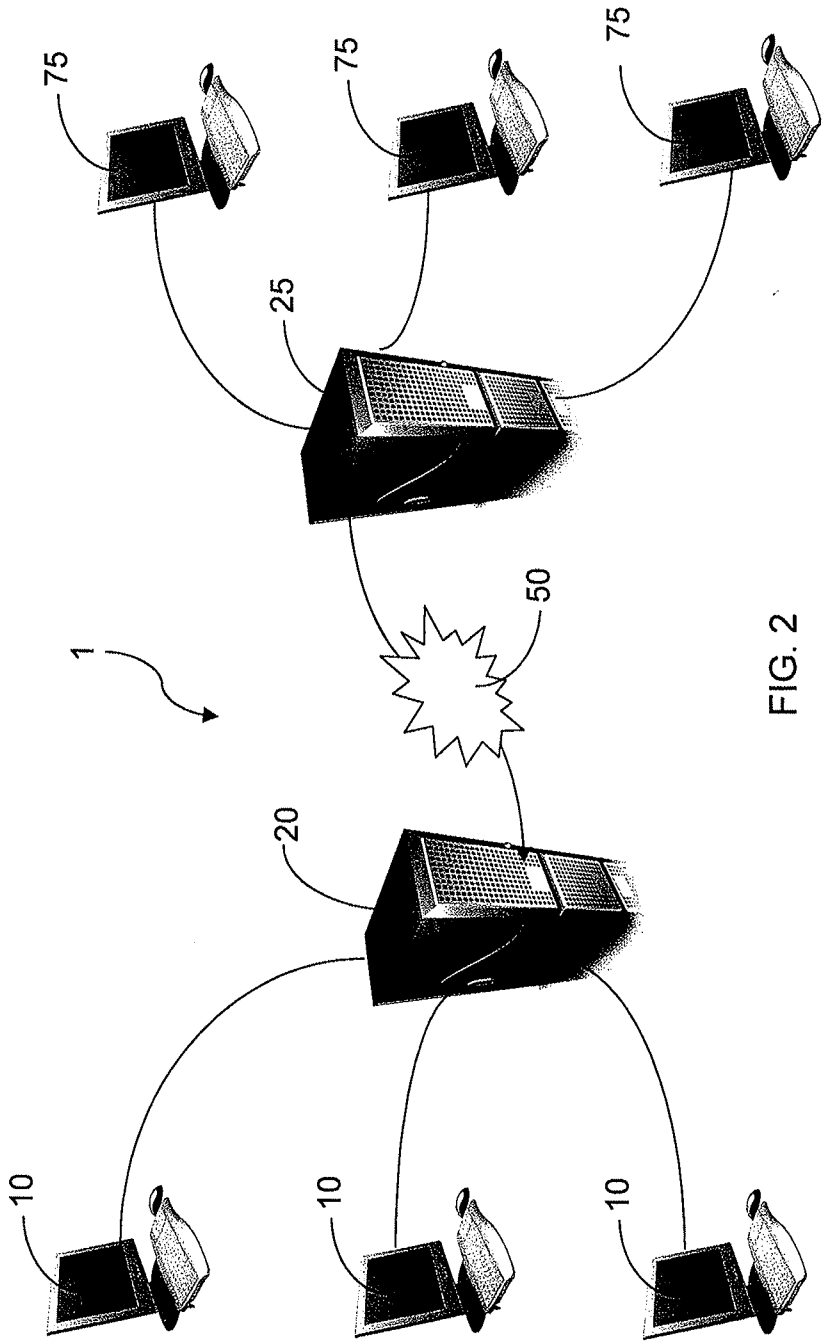

FIG. 2

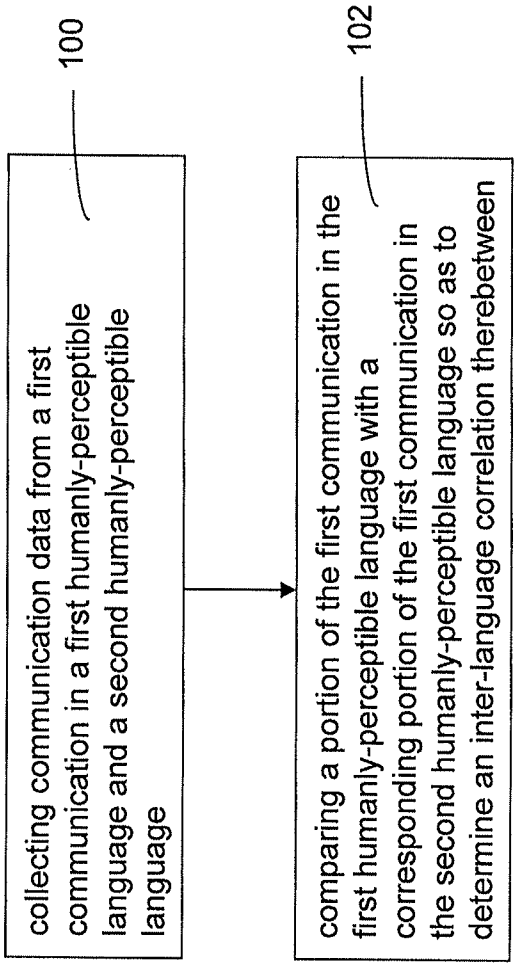
collecting communication data from a first communication in a first humanly-perceptible language and a second humanly-perceptible language
100
comparing a portion of the first communication in the first humanly-perceptible language with a corresponding portion of the first communication in the second humanly-perceptible language so as to determine an inter-language correlation therebetween
102

FIG. 3

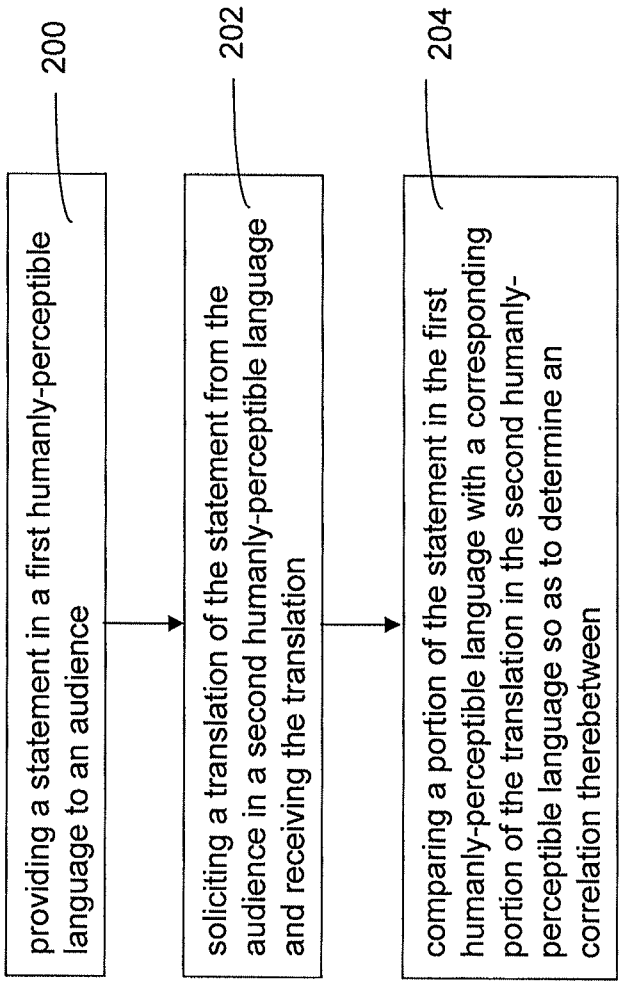
200
providing a statement in a first humanly-perceptible language to an audience
202
soliciting a translation of the statement from the audience in a second humanly-perceptible language and receiving the translation
204
comparing a portion of the statement in the first humanly-perceptible language with a corresponding portion of the translation in the second humanly-perceptible language so as to determine an correlation therebetween

FIG. 4

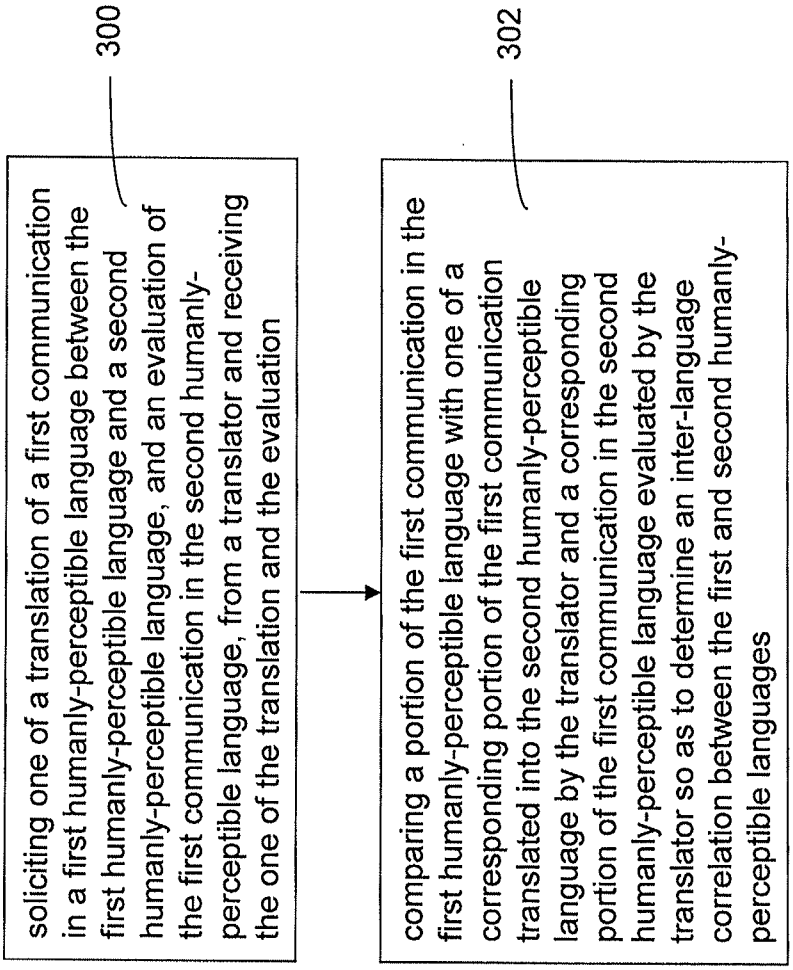
300
soliciting one of a translation of a first communication in a first humanly-perceptible language between the first humanly-perceptible language and a second humanly-perceptible language, and an evaluation of the first communication in the second humanly-perceptible language, from a translator and receiving the one of the translation and the evaluation
302
comparing a portion of the first communication in the first humanly-perceptible language with one of a corresponding portion of the first communication translated into the second humanly-perceptible language by the translator and a corresponding portion of the first communication in the second humanly-perceptible language evaluated by the translator so as to determine an inter-language correlation between the first and second humanly-perceptible languages

FIG. 5

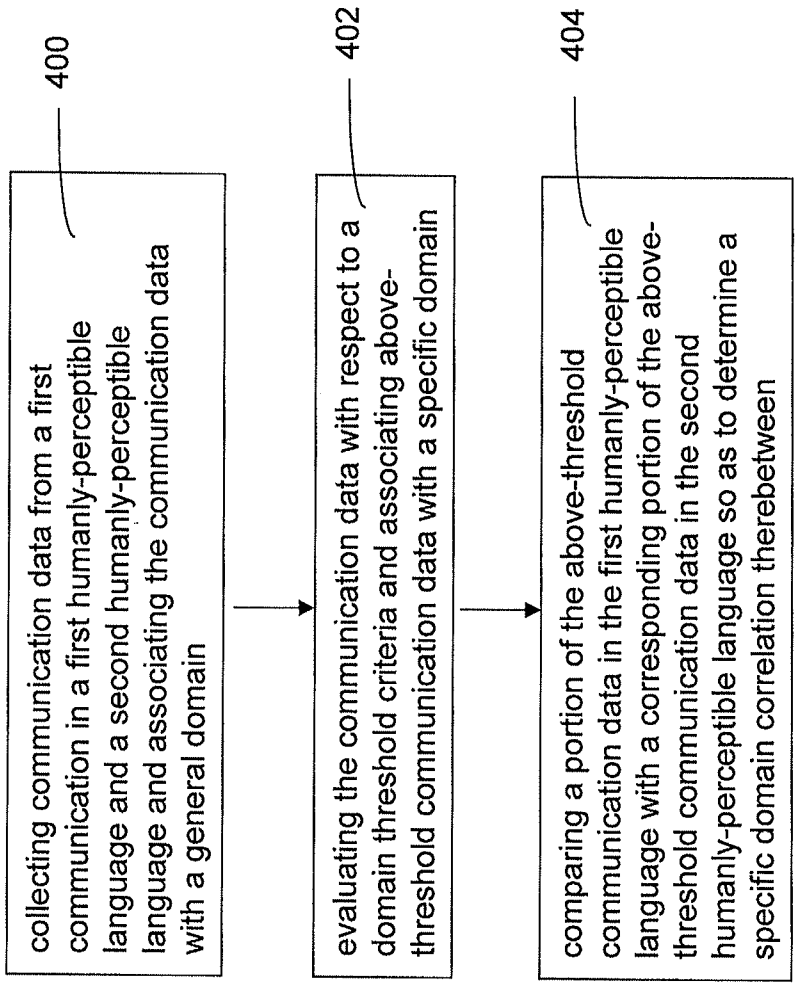
400
collecting communication data from a first communication in a first humanly-perceptible language and a second humanly-perceptible language and associating the communication data with a general domain
402
evaluating the communication data with respect to a domain threshold criteria and associating above-threshold communication data with a specific domain
404
comparing a portion of the above-threshold communication data in the first humanly-perceptible language with a corresponding portion of the above-threshold communication data in the second humanly-perceptible language so as to determine a specific domain correlation therebetween

FIG. 6

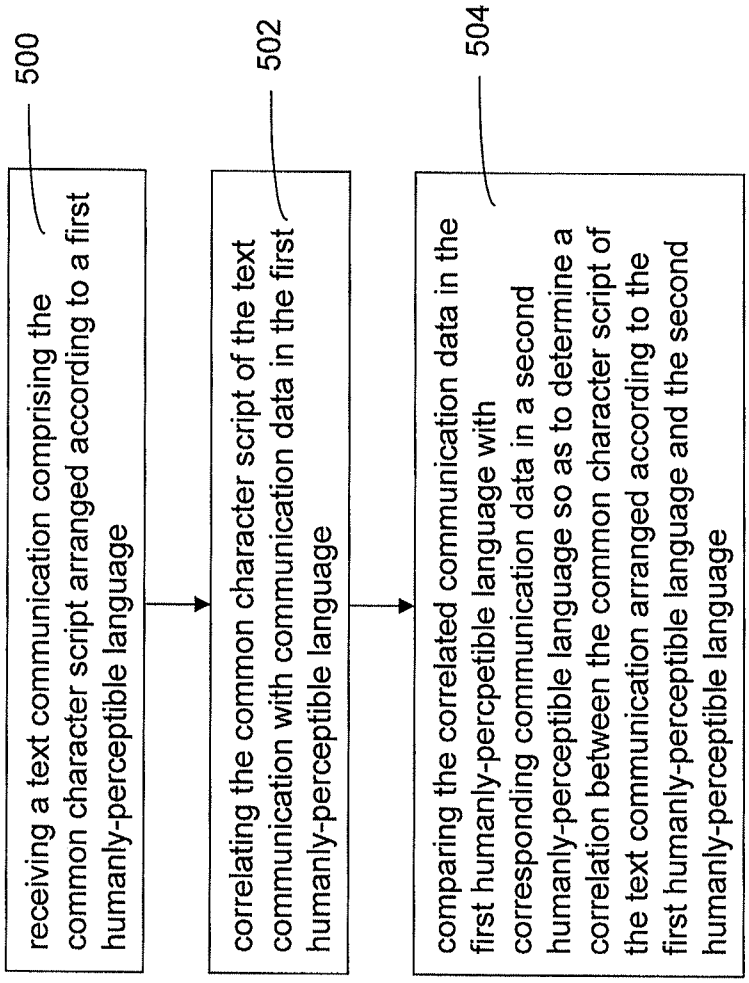
500
receiving a text communication comprising the common character script arranged according to a first humanly-perceptible language
502
correlating the common character script of the text communication with communication data in the first humanly-perceptible language
504
comparing the correlated communication data in the first humanly-percpetible language with corresponding communication data in a second humanly-perceptible language so as to determine a correlation between the common character script of the text communication arranged according to the first humanly-perceptible language and the second humanly-perceptible language

FIG. 7

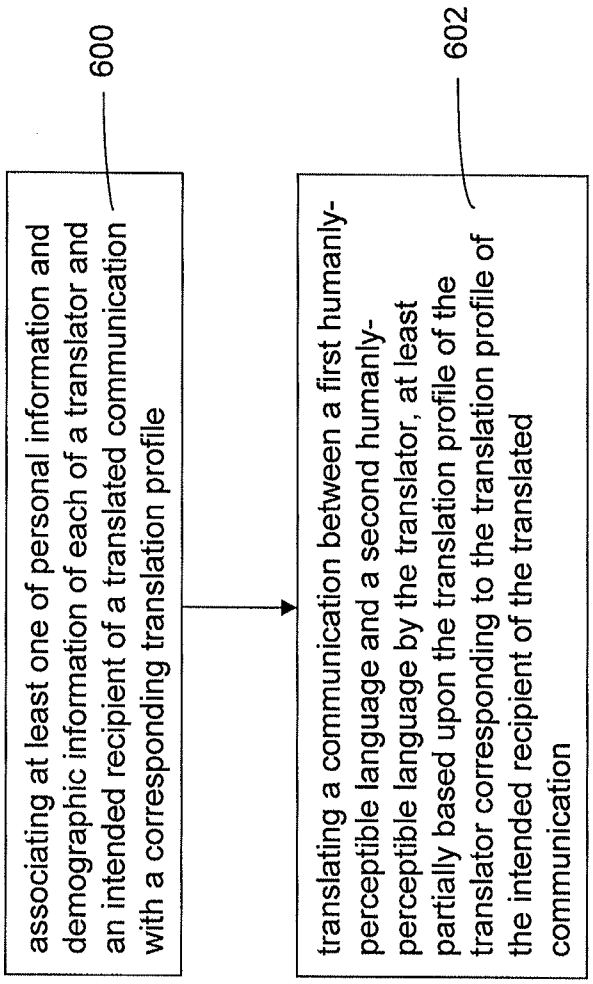
600
associating at least one of personal information and demographic information of each of a translator and an intended recipient of a translated communication with a corresponding translation profile
602
translating a communication between a first humanly-perceptible language and a second humanly-perceptible language by the translator, at least partially based upon the translation profile of the translator corresponding to the translation profile of the intended recipient of the translated communication

FIG. 8

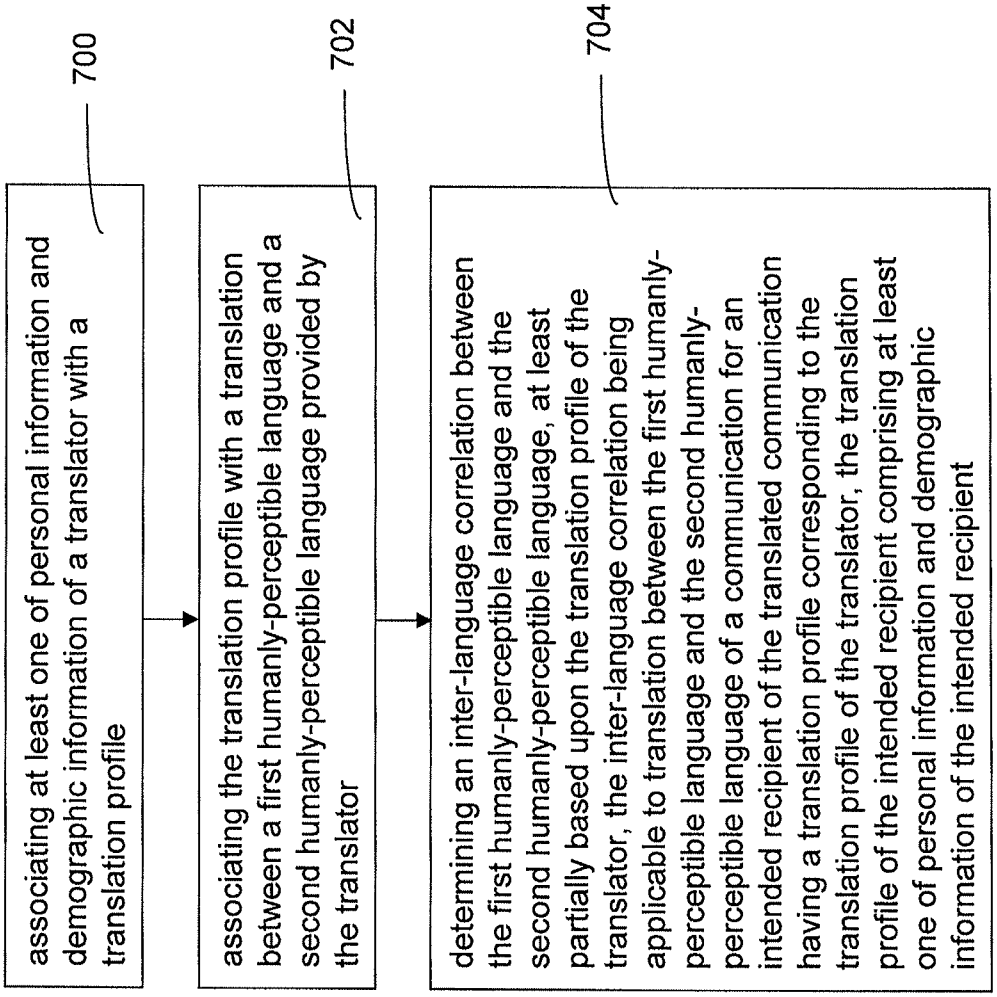
associating at least one of personal information and demographic information of a translator with a translation profile
700
associating the translation profile with a translation between a first humanly-perceptible language and a second humanly-perceptible language provided by the translator
702
determining an inter-language correlation between the first humanly-perceptible language and the second humanly-perceptible language, at least partially based upon the translation profile of the translator, the inter-language correlation being applicable to translation between the first humanly-perceptible language and the second humanly-perceptible language of a communication for an intended recipient of the translated communication having a translation profile corresponding to the translation profile of the translator, the translation profile of the intended recipient comprising at least one of personal information and demographic information of the intended recipient
704

FIG. 9

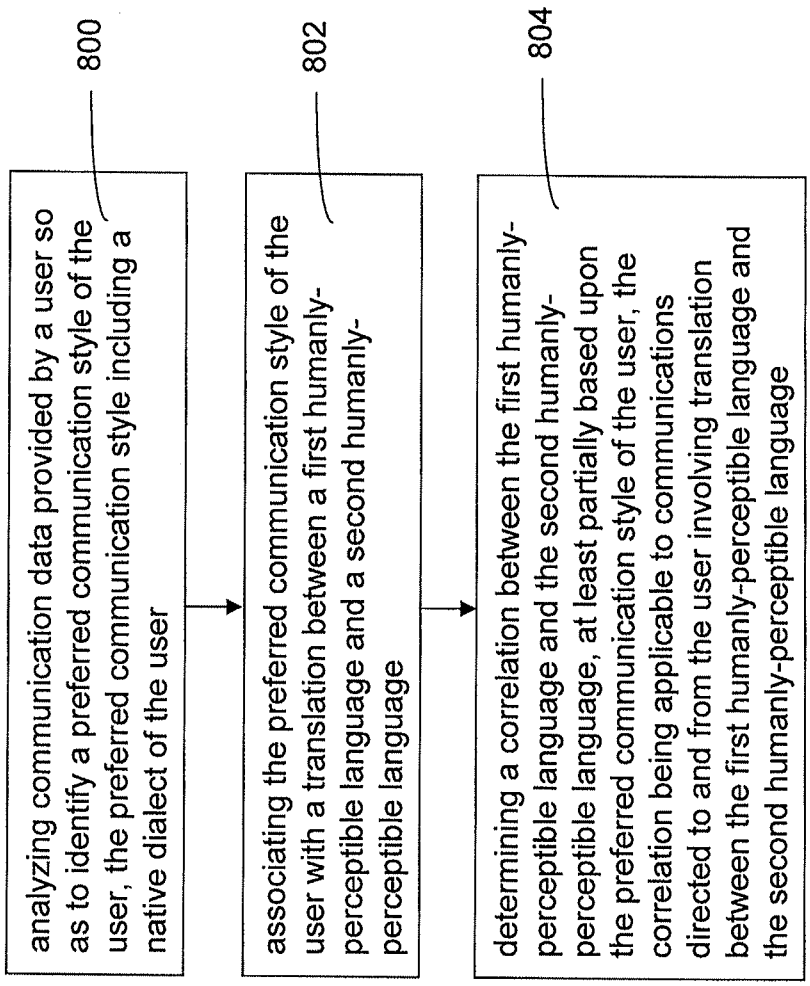
analyzing communication data provided by a user so as to identify a preferred communication style of the user, the preferred communication style including a native dialect of the user
800
associating the preferred communication style of the user with a translation between a first humanly-perceptible language and a second humanly-perceptible language
802
determining a correlation between the first humanly-perceptible language and the second humanly-perceptible language, at least partially based upon the preferred communication style of the user, the correlation being applicable to communications directed to and from the user involving translation between the first humanly-perceptible language and the second humanly-perceptible language
804

FIG. 10

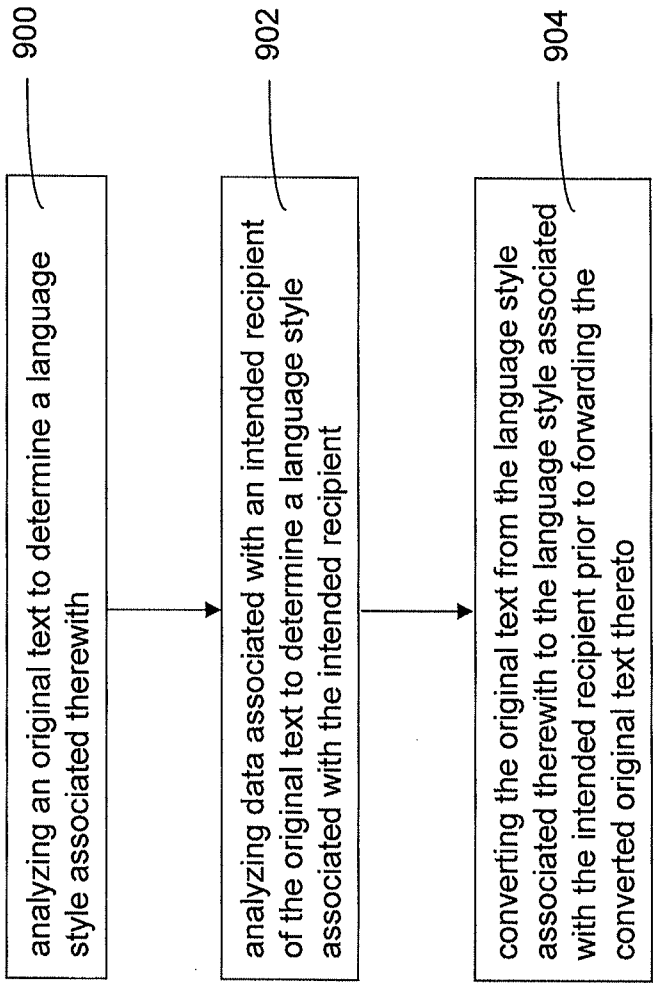
900
analyzing an original text to determine a language style associated therewith
902
analyzing data associated with an intended recipient of the original text to determine a language style associated with the intended recipient
904
converting the original text from the language style associated therewith to the language style associated with the intended recipient prior to forwarding the converted original text thereto

FIG. 11

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2009/062026

A. CLASSIFICATION OF SUBJECT MATTER
INV. G06F17/28

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2008/249760 A1 (MARCU DANIEL [US] ET AL) 9 October 2008 (2008-10-09) paragraphs [0005], [0016] - [0027], [0031]	2
X	BENJAMIN B., KNIGHT K., MARCU D.: "Translation by the Numbers : Language Weaver" AMTA 2002, LNAI 2499, [Online] 2003, pages 1-3, XP002568230 Springer-Verlag, Berlin Heidelberg Retrieved from the Internet: URL:http://www.springerlink.com/content/87htwjh02eyx14kt/fulltext.pdf> [retrieved on 2010-02-07] the whole document	3

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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
11 February 2010	22/02/2010

Name and mailing address of the ISA/	Authorized officer
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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2009/062026

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	AW A., ZHANG M., XIAO J., SU J.: "A phrase-based statistical translation model for SMS text normalization" COLING/ACL 2006, [Online] 2006, pages 33-40, XP002568231 Sydney Retrieved from the Internet: URL:http://portal.acm.org/ft_gateway.cfm?id=1273078&type=pdf&coll=GUIDE&dl=GUIDE&CFID=77563375&CFTOKEN=22879460> [retrieved on 2010-02-07] abstract Sections 1,3-5	4,5
A	US 6 374 224 B1 (HORIGUCHI KEIKO [US] ET AL) 16 April 2002 (2002-04-16) abstract	3-5
A	US 2006/217959 A1 (SAITO TERUKA [JP] ET AL) 28 September 2006 (2006-09-28) abstract; figure 8 paragraph [0028]	3-5
A	KOEHN P: "Europarl: A Parallel Corpus for Statistical Machine Translation" INTERNET CITATION, [Online] XP002351175 Retrieved from the Internet: URL:http://www.iccs.informatics.ed.ac.uk/pkoehn/publications/europarl-mtsummit05.pdf> [retrieved on 2005-10-25] Sections 1-3	2-5
A	EP 1 533 736 A (LIALIARIS DIMITRIOS [GR]) 25 May 2005 (2005-05-25) abstract	2-5

INTERNATIONAL SEARCH REPORT

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. [X] Claims Nos.: 1
because they relate to subject matter not required to be searched by this Authority, namely:

see FURTHER INFORMATION sheet PCT/ISA/210

2. [ ] Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. [ ] Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. [ ] As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. [ ] As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. [ ] As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. [ ] No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

[ ] The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

[ ] The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

[ ] No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Claims Nos.: 1

Rule 39.1(iii) PCT - Scheme, rules and method for performing mental acts :

The method for customizing translation in claim 1 is not disclosed as a technical function of a system, since both the step of "associating" information of a translator and a recipient with a translation profile, and the step of "translating" the communication based on the profile are disclosed as abstract method steps, without indication of a technical means to perform the method. In particular, the term "the translator" cannot be understood as referring to a technical means, since the "translator" is characterized by "personal" and/or "demographic" information, which - according to the description, paragraph 0049 - includes "language preferences, geographic location, age, occupation/profession, etc", ie. all characteristics which are clearly used o characterize human beings. As a consequence, the translation is done by a human being, and therefore, the method of customizing the translation is to be understood as referrring to a purely mental act, for which no international search should be carried out (Art. 17(2)(b) PCT).

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2009/062026

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2008249760 A1	09-10-2008	WO 2008124006 A1	16-10-2008
US 6374224 B1	16-04-2002	JP 2000353161 A	19-12-2000
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		JP 4311365 B2	12-08-2009
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