

tronic ink data may be collected based on movement of a pen between a pen-down event and a pen-up event, e.g., as an ink stroke or in other conventional manners as are known in the art.

[0027] “Hover”—Positioning or locating a pen proximate or adjacent to a digitizer surface but not in contact with the surface. No specific time period or cessation of motion at a particular location or position is necessary to constitute a “hover” action, although the pen may remain still during a hover event. As an example, a “hover” event may occur or be recognized during the time period that a user continuously moves a pen toward and into contact with a digitizer surface.

[0028] “Render” or “Rendered” or “Rendering”—The process of determining how information (including text, graphics, and/or electronic ink) is to be displayed, whether on a screen, printed, or output in some other manner.

[0029] “Computer-Readable Medium” means any available media that can be accessed by a user on a computer system. By way of example, and not limitation, “computer-readable media” may include computer storage media and communication media. “Computer storage media” includes volatile and nonvolatile, removable and non-removable media implemented in any method or technology for storage of information, such as computer-readable instructions, data structures, program modules or other data. “Computer storage media” includes, but is not limited to, RAM, ROM, EEPROM, flash memory or other memory technology; CD-ROM, digital versatile disks (DVD) or other optical storage devices; magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage devices; or any other medium that can be used to store the desired information and that can be accessed by a computer. “Communication media” typically embodies computer-readable instructions, data structures, program modules or other data in a modulated data signal, such as a carrier wave or other transport mechanism, and includes any information delivery media. The term “modulated data signal” means a signal that has one or more of its characteristics set or changed in such a manner as to encode information in the signal. By way of example, and not limitation, communication media includes wired media, such as a wired network or direct-wired connection, and wireless media, such as acoustic, RF, infrared and other wireless media. Combinations of any of the above should also be included within the scope of “computer-readable media.”

II. GENERAL DESCRIPTION OF VARIOUS ASPECTS OF THE INVENTION

[0030] As generally described above, aspects of the present invention relate to systems and methods that enhance modifying or editing capabilities and other functions associated with use of and interaction with electronic documents. Such systems and methods may include: (a) a processor programmed and adapted (i) to maintain an electronic document, wherein at least a first portion of content in the electronic document (e.g., an individual word, character, or character string) includes content generated by a recognizer, and (ii) to store data associated with the first portion of the content, wherein the data is stored in a data structure that includes information not included in the electronic document (e.g., in an expanded version of the electronic

document or a backing store electronic document); and (b) an input device that receives input selecting the first portion of the content. The processor further may be programmed and adapted to provide at least one selectable alternative for the first portion of the content based at least in part on the stored data associated with the first portion. Once an alternative is selected, e.g., through user input, the content of the electronic document may be changed to correspond to the selected alternative.

[0031] Systems and methods according to at least some examples of the invention are particularly useful for processing various edit functions in electronic documents in which at least some of the content in the document (e.g., the “first portion” of the content described above) is generated by a recognition program or engine, such as a speech recognition program or a handwriting recognition program. In such systems and methods, the stored data associated with the first portion of the content of the electronic document may include potential alternative characters, words, or character strings identified by the recognizing program or engine when recognition occurred. If desired, in at least some examples, the stored data associated with the first portion of the content may include a supporting version of the electronic document and/or an expanded version of the electronic document, maintained separate from the electronic document, and the data associated with the first portion of the content (such as the potential alternative characters, words, or character strings as described above) may be included in one or more properties stored in the expanded copy of the electronic document but not included in or useful by the actual electronic document.

[0032] Systems and methods according to various examples of the invention further may include: (a) receiving input changing the content of the electronic document (e.g., through a correction interface); and (b) changing the stored data associated with the first portion of the content of the electronic document, if necessary, based on the input changing the content of the electronic document. Additionally, input and corresponding synchronizing changes may take place in the other direction. For example, at least some examples of systems and methods according to the invention further may include: (a) receiving input changing the stored data associated with the first portion of the content of the electronic document (e.g., via a correction interface); and (b) changing the electronic document, if necessary, based on the input changing the stored data. In these manners, the separately stored data associated with the first portion of the content of the electronic document will remain up to date and/or synchronized with respect to the content of the electronic document, and vice versa.

[0033] Additional aspects of the invention relate to systems and methods that include: (a) receiving input in an electronic document, wherein the electronic document includes a data structure having a plurality of independent data sets; (b) maintaining a supporting data structure based on content in at least a portion of the electronic document, wherein the supporting data structure includes a plurality of supporting data sets such that at least some of the independent data sets in the electronic document include an associated supporting data set in the supporting data structure; and (c) receiving input requesting display of or access to information contained in at least one supporting data set. In such systems and methods, at least some of the independent