

computer 252. The computer 252 selects one of the users that have sent back login acknowledgment messages (i.e., ACK_LOGIN). As represented by the arrow 1935, the computer 252 constructs a patch request message (i.e., a require modification message), REQ_MOD, by concatenating the predetermined REQ_MOD opcode, the username (i.e., Z), the UUID of the document, and the version string of the version of the document which needs to be updated. The version string is determined by Z to be the most recent version containing both Y and Z as acknowledgers in the version information (in this case version 0). Alternatively, this argument can be omitted and Y performs this determination. Then the computer 252 transmits the REQ_MOD message to the computer 250 being operated by Y. Upon receiving the REQ_MOD message the computer 250 determines the difference between the latest version and the last version of the document which Z had approved before going offline and constructs a MODIFY message from the predetermined MODIFY opcode. The MODIFY message constructed by the computer 250 includes the username (i.e., Y), the document UUID, and the patch representing the determined difference between the latest version and the last version of the document which Z had approved. The computer 250 then transmits the MODIFY message including the patch to the computer 252, as represented by the arrow 1940.

[0201] The computer 252 being operated by Z must then acknowledge receipt of the patch from Y. The computer 252 constructs a modification acknowledgment message, ACK_MOD from the predetermined ACK_MOD opcode. The ACK_MOD message includes the username of the modifier (i.e., Y), the username of the acknowledger (i.e., Z), the document UUID, the old version string, and, optionally, a hash of patch representing the modification made by Y (i.e., for verification purposes). Then the computer 252 transmits the ACK_MOD message to the computer 200, as represented by the arrow 1945. Similarly, the computer 252 transmits the ACK_MOD message to the computer 250, as represented by the arrow 1950.

[0202] The user Z must then notify the active collaborators (i.e. X and Y) of any modifications that the user Z has made while offline. The computer 252 constructs a modification message, MODIFY, from the predetermined MODIFY opcode. The MODIFY message includes the username of the modifier (i.e., Z), the document UUID, the old version string (0), the new version string (1), and the difference between the two versions of the document. The computer 252 then transmits the modification message, MODIFY, to Y, as represented by the arrow 1955 and to X as represented by the arrow 1960. In reply to the MODIFY messages sent by Z, the computers 200 and 250 being operated by X and Y, construct and transmit modification acknowledgment messages ACK_MOD to the computer 252 being operated by Z, as represented by the 1970 and 1980. Further, the computer 200 being operated by X constructs and transmits a modification acknowledgment message, ACK_MOD, to Y, in the manner described above, as represented by the arrow 1965. Similarly, the computer 250 being operated by Y constructs and transmits a modification acknowledgment message, ACK_MOD, to X, in the manner described above, as represented by the arrow 1975.

[0203] The aforementioned preferred method(s) comprise a particular control flow. There are many other variants of

the preferred method(s) which use different control flows without departing from the spirit or scope of the invention. Furthermore one or more of the steps of the preferred method(s) may be performed in parallel rather sequentially.

[0204] The foregoing describes only some embodiments of the present invention, and modifications and/or changes can be made thereto without departing from the scope and spirit of the invention, the embodiments being illustrative and not restrictive.

1. A method of editing an electronic document, said method comprising the steps of:

publishing editorial modifications that a first collaborator has made to the document;

acknowledging receipt of modifications by one or more other collaborators;

merging the published modifications with any local modifications to produce a merged version of the modifications; and

applying the merged modifications to the document to produce an edited version of the document including the editorial modifications, the edited version containing data incorporated therein indicating acknowledgment of the editorial modifications by one or more of the collaborators.

2. A method according to claim 1, further comprising the step of updating the data incorporated within the edited version of the document to indicate acknowledgment of the editorial modifications by the other collaborators.

3. A method according to any one of claims 1 and 2, wherein the data identifies the version of the document.

4. A method according to claim 1, wherein the data comprises a universally-unique identifier.

5. A method according to claim 1, wherein said merging step is performed depending on whether an author of the editorial modifications was active when the document was last modified by any one of the collaborators.

6. A method according to claim 1, further comprising the step of determining a component of the merged modifications using a weighted arithmetic mean.

7. A method according to claim 1, further comprising the step of determining a component of the merged modifications using a weighted arithmetic mean.

8. A method according to claim 1, further comprising the step of electing a value for one or more components of the merged modifications.

9. A method according to claim 1, further comprising the step of acknowledging receipt of the published document.

10. A method according to claim 1, wherein any one or more of the steps of said method are performed independently by two or more computers connected over a network.

11. A method according to claim 1, wherein the modified version of the document is transmitted over a network.

12. A method of editing a document over a network, said method comprising the steps of:

transmitting editorial modifications to the document over the network from a first location to a second location upon the editorial modifications being made to the document at the first location by a first collaborator; and

applying the editorial modifications to a version of the document stored at the second location, to produce an edited version of the document, the edited version