

[0091] The following table shows how various selection events can be interpreted in systems and methods according to some examples of the invention:

that have occurred, the Text Services Framework document (e.g., like the expanded version or backing store version of electronic document 714) will be updated to match the

Original Element	End Element	Change in Document		IP Location at End	Comments
		Length	End		
IP	Selection	+x	None		Lost Synchronization
IP	Selection	0	None		Selection Made
IP	Selection	-x	None		Lost Synchronization
Selection	IP	+x	Selection end + x		Selection replaced by larger text
Selection	IP	+x	Not Selection end + x		Lost synchronization
Selection	IP	0	Selection Start		Selection collapsed to IP Start
Selection	IP	0	Selection End		Ambiguous: Selection collapsed to IP End or Selection Replaced with identical sized text
Selection	IP	0	Elsewhere		IP moved, canceling selection
Selection	IP	-x	Selection Start		Selection deleted
Selection	IP	-x	Selection Start + selection length - x		Selection replaced with shorter text
Selection	IP	-x	All others		Lost Synchronization
Selection	Selection	0	None		Ambiguous: No operation or Selection replaced by same length selection
Selection	Selection	+x	None		Lost Synchronization
Selection	Selection	-x	None		Lost Synchronization

[0092] Almost all user operations can be determined easily, and the Text Services Framework document (like the expanded copy of the electronic document 714) can be adjusted easily based on this information to keep it in full synchronization with the non-Text Services Framework document (like electronic document 706). In the few cases where the changes are ambiguous and determining what actually occurred may be computationally expensive and/or slow (e.g. selecting the entire document), it is not necessary for systems and methods to attempt to maintain synchronization of all portions. Rather, in such situations, synchronization over smaller portions or regions of the document may be maintained and checks for synchronization and potential available alternatives may take place on a smaller portion of the entire document. As another alternative, when later smaller ranges or regions of the document are selected (e.g., for making edits or corrections), synchronization can be checked at that time over the smaller range or selection, and updates to the Text Services Framework based document can be made, if necessary, if synchronization does not exist. This action would eliminate any stored alternatives for that range and result in reporting no alternatives to the calling application program when the correction interface was activated over that region. However, in this manner, overly time consuming synchronization can be avoided without incorrectly reporting that alternatives when they do not exist.

[0093] When an explicit "lost synchronization" result is obtained, this may be due to the application programmatically changing the text in the edit field (e.g., by scrolling up and/or down a set of possible fonts in a font combo box field). Such situations typically will result in loss of all saved alternatives anyway because the text will be changed.

[0094] Once systems and methods according to this example of the invention have determined the text changes

changes. To do so, the set of stored Text Services Framework Unaware Application Support text insertions is reviewed. If the stored Text Services Framework Unaware Support Application text insertions match the changed text, the text in the Text Services Framework document is replaced with the text+alternatives from the Text Services Framework Unaware Support application data. If a partial match of this text insertion data is found, the data is maintained to match against the next text change in the document (e.g., to check changes in a character-by-character manner). If no match is then found, the data is discarded and the Text Services Framework document is not updated.

[0095] The Text Services Framework document is owned by the operating system (not the application program), so the operating system provides the correct screen location when requested by a Text Services Framework document's text insertion product. Therefore, when the text insertion product is asked to display an alternatives list or a suggestion list, the list will appear in the correct screen location as if the field itself were in a Text Services Framework document.

[0096] When a change is made in the Text Services Framework backing store document that is not a result of electronic document to backing store document synchronization (e.g., changes coming through the correction user interface), this change must be passed to the original electronic document. Such changes in the backing store document may be monitored using the conventionally available Text Services Framework application programming interfaces ("APIs"). When a change occurs, a Windows Edit Messages is used to effect the appropriate change in the original electronic document. When the original electronic document is changed in this manner, the changes are not passed back to the backing store document for synchronization.