EXPOSING NON-AUTHORING FEATURES THROUGH DOCUMENT STATUS INFORMATION IN AN OUT-SPACE USER INTERFACE

BACKGROUND

[0001] In many document editors, authoring features, such as text and data entry features, formatting features, and the like, are available via one or more readily available feature menus. However, non-authoring features, such as document security management, file format conversion, and document editing permissions management, are often difficult to locate. In addition, when a user determines a non-authoring status of a given document, for example, whether the document is in "read-only" mode, an application feature for changing the non-authoring status may be difficult to locate and use. In addition, when a given type of status for a document changes, for example, when the document is being edited by another user, a present user may not know that the status of the document has changed.

[0002] It is with respect to these and other considerations that the present invention has been made.

SUMMARY

[0003] This Summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This Summary is not intended to identify key and/or essential features of the claimed subject matter. Also, this Summary is not intended to limit the scope of the claimed subject matter.

[0004] Embodiments of the present invention solve the above and other problems by providing access to document information and status and related features/functionalities via an out-space user interface for a document editor program. An out-space actuator is associated with an in-space user interface having a displayed document. When the out-space actuator is selected, an out-space user interface is displayed that includes a display surface for displaying document information and status and for exposing non-authoring features and functionalities.

[0005] According to one embodiment, the out-space user interface may be used to display one or more status panes for providing status information about a document being edited in the in-space user interface. According to another embodiment, application

features for affecting changes to a given document's status may be exposed in the out-space interface in proximity to associated status information.

[0006] According to another embodiment, an out-space communication user interface (UI) component may be temporarily displayed in the document in-space user interface to communicate document status information that is presently available in the out-space user interface. The out-space actuator may be displayed in the out-space communication UI component to allow a user to selectively display the out-space UI to receive additional information and/or features or functionality associated with the document status information. According to one embodiment, a document status pane displayed in the out-space user interface associated with the information displayed in the out-space communication UI component may be visually highlighted to call a user's attention to a document status pane associated with the information displayed in the out-space communication user interface component.

[0007] According to another embodiment, a message bar may be displayed in the in-space user interface for communicating information from the out-space user interface. An out-space actuator may be displayed in the message bar for visually associating the message bar with the out-space user interface and for allowing a user to selectively launch the out-space user interface for obtaining additional information and/or functionality or features associated with the document status information communicated from the out-space user interface via the message bar displayed in the in-space user interface.

[0008] These and other features and advantages which characterize the present invention will be apparent from a reading of the following detailed description and a review of the associated drawings. It is to be understood that both the foregoing general description and the following detailed description are explanatory only and are not restrictive of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] Non-limiting and non-exhaustive embodiments of the present invention are described with reference to the following figures, wherein like reference numerals refer to like parts throughout the various views unless otherwise specified.

[0010] FIGURE 1 represents one example of an in-space user interface having an out-space actuator;

[0011] FIGURE 2 represents one example of an out-space user interface having a document information tab;

[0012] FIGURE 3 represents one example of an out-space user interface having a document log tab;

[0013] FIGURE 4 represents one example of an out-space user interface having a share document tab;

[0014] FIGURE 5 represents one example of an out-space user interface having a print document tab;

[0015] FIGURE 6 represents one example of an out-space user interface having a getting started tab;

[0016] FIGURE 7 represents one example of an out-space user interface having a application information tab;

[0017] FIGURE 8 represents one exemplary operational flow diagram for accessing an out-space user interface in a document editor program;

[0018] FIGURE 9 represents one example of an out-space user interface showing a number of document status information panes and associated application feature selection controls;

[0019] FIGURE 10 represents one example of an out-space user interface showing a number of document status information panes and associated application feature selection controls;

[0020] FIGURE 11 represents one exemplary operation flow diagram for accessing document status and associated application features via an out-space user interface in a document editor program;

[0021] FIGURE 12 represents one example of an in-space user interface having an out-space communication user interface component and having an improved message bar user interface component;

[0022] FIGURE 13 represents one example of an out-space user interface showing a number of document status information panes and associated application feature selection controls;

[0023] FIGURE 14 represents one exemplary operational flow diagram for receiving a communication of document status via an out-space communication user interface component, and via an improved message bar user interface component; and

[0024] FIGURE 15 represents an exemplary computing device with which embodiments of the present invention may be practiced.

DETAILED DESCRIPTION

[0025] Embodiments are described more fully below with reference to the accompanying drawings, which form a part hereof, and which show specific exemplary embodiments. However, embodiments may be implemented 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 be thorough and complete, and will fully convey the scope. Embodiments may be practiced as methods, systems or devices. Accordingly, embodiments may take the form of an entirely hardware implementation, an entirely software implementation or an implementation combining software and hardware aspects. The following detailed description is, therefore, not to be taken in a limiting sense.

[0026] The logical operations of the various embodiments are implemented (1) as a sequence of computer implemented steps running on a computing system and/or (2) as interconnected machine modules within the computing system. The implementation is a matter of choice dependent on the performance requirements of the computing system implementing the invention. Accordingly, the logical operations making up the embodiments described herein are referred to alternatively as operations, steps or modules.

[0027] Embodiments of the invention are directed to accessing an out-space user interface from an in-space user interface of a document editor. According to one embodiment, the out-space user interface is an interface that includes a category of features that do not require a document to be present on the display surface. According to another embodiment, an out-space user interface is a user-interface that includes non-authoring system features for a document editor program. The out-space user interface provides features to allow a user to do something with the document. In one aspect, the features do not affect the content of the document. As an example, out-space features may include document information features, document log features, print features, getting started features, and application information features. As other examples, out-space features may include a new feature, an open feature, a save feature, a close feature, a document inspector feature, a send for review feature, a mark as final feature, a permissions feature, a template feature, a PDF feature, document properties, a package for CD feature, an encryption feature, an online feature, an assign document tasks feature, an options feature, a publish to server feature, related document links, a digital signature, a blog feature, a compatibility checker, a fax feature, a document workspace, versioning, check in/out services, and workflow services. Other examples of out-space features may

include tagging, workspaces/projects, related document and information features, access to sharing features, branding, people and groups, community connections and file searches. The aforementioned are but a few examples of out-space features. Out-space features may include any non-authoring features that do not require the user to see the document while working with the features. In one aspect, the out-space user interface only includes non-authoring features that do not affect the content of the document. In another aspect, the out-space user interface does not include authoring features.

[0028] According to one embodiment, the out-space user interface may be used to display one or more document status panes or slabs which are user interface components for displaying document status information, for example, document security management status, document file format status information, information about one or more other users having access to a given document, whether a document contains digital signatures, whether previous versions of the document are available, whether the document is set to a particular edit mode, for example, "read-only," and the like.

[0029] According to another embodiment, application features and/or functionalities for affecting changes to document status may be exposed in proximity to displayed document status in the form of a selectable button or control for allowing a user to selectively affect changes to displayed document status via an associated application feature. Alternatively, information about how a given application feature or functionality may be applied to an associated document status may be displayed with the document status.

[0030] According to another embodiment, an out-space communication user interface (UI) component may be temporarily displayed in the document in-space user interface to communicate document status information that is presently available in the out-space user interface. The out-space actuator may be displayed in the out-space communication UI component to allow a user to selectively display the out-space UI to receive additional information and/or features or functionality associated with the document status information. According to one embodiment, a document status pane displayed in the out-space user interface associated with the information displayed in the out-space communication UI component may be visually highlighted to call a user's attention to a document status pane associated with the information displayed in the out-space communication user interface component.

[0031] According to still another embodiment, a message bar may be displayed in the in-space user interface for communicating information from the out-space user interface.

An out-space actuator may be displayed in the message bar for visually associating the message bar with the out-space user interface and for allowing a user to selectively launch the out-space user interface for obtaining additional information and/or functionality or features associated with the document status information communicated from the out-space user interface via the message bar displayed in the in-space user interface.

[0032] In contrast to the out-space user interface, an in-space user interface is a user interface that includes authoring features for authoring or changing the content of a document. The affects of an in-space feature show up on the document that is being authored. An in-space user interface may include home features, insert features, page layout features, reference features, mailing features, review features and view features. An in-space user interface may also include formatting features and writing tools. Other examples of in-space user interface features may include text features, picture features, tables, shapes, chat features, bold features, font features, layout features, arranging features, style features, find tools, spelling tools, a paste tool, a word count, and a synonym finder. These examples are but a few examples of in-space features. In-space features may include any authoring feature for authoring or changing the content of a document.

[0033] As set forth herein, a user may open a document editor to author a document. A document editor may include a word processing editor, a spreadsheet editor, a slide presentation editor, a web page editor, an email editor and/or any other type of editor for editing a document. Although a document editor is described herein, an out-space user interface may also be associated with non-editing programs such as a browser, a web page, an email application, a project application, etc. When a document editor is opened, the user may author a document using the in-space user interface. When the user decides to perform a non-authoring feature the user may select an out-space actuator. Upon selection, the document is removed from the display and the ribbon is expanded to provide display space for the rich out-space features. In another aspect, the ribbon is replaced with an expanded feature selection surface. In still another aspect, the document is converted to an image, thumbnail, or miniature bitmap and moved to the out-space user interface. In yet another aspect, the entire in-space user interface is converted to an image, thumbnail, or miniature bitmap and moved to the out-space user interface. In this manner, the user has reassurance that they are not leaving the document editor program. If the user desires returning to the in-space user interface, the document image may be selected. Upon selection, the in-space user interface is repopulated on the display.

[0034] By providing navigation between in-space and out-space, users may easily become familiar with out-space features because they are separated from authoring features. By separating in-space and out-space features, users may easily find features because the features are categorized. Features may be richer and provide more information and functionality because the "real estate" of the display is better utilized. A greater amount of "real estate" is available for out-space features, thereby allowing software developers the opportunity to increase the functionality of a document editor program. Channels of communication associated with a document are better managed because they are not mixed in with in-space features.

[0035] FIGURE 1 represents one example of a primary or in-space user interface having an out-space actuator. Document editor 100 includes ribbon 102, document 104 and out-space actuator 106. Document editor 100 may include a word processing editor, a spreadsheet editor, a slide presentation editor, a web document editor, an email editor and/or any other type of editor for editing a document. Document editor may be associated with a computing device, such as the exemplary computing device set forth in FIGURE 9.

[0036] Ribbon 102 includes a plurality of ribbon tabs such as home tab, insert tab, page layout tab, references tab, mailings tab, review tab, view tab, and/or any other type of authoring tab. Ribbon 102 may also include features associated with the tab. For example, ribbon 102 depicts a home tab having clipboard features, font features, paragraph features, style features, and editing features. The tabs and features depicted in FIGURE 1 are but examples of tabs and features. Ribbon 102 may include any type of authoring tabs and features depending on the type of document 104 being authored.

[0037] Document 104 may be located below ribbon 102. Document 104 may be a "live" document that allows a user to edit and author the content of document 104. Document 104 may include a word processing document, a slide presentation document, a spreadsheet document, an internet document, an email document, and/or any other type of document that may be authored.

[0038] Out-space actuator 106 may include any type of button or selector. Even though out-space actuator 106 is depicted in the upper left corner of document editor 104, out-space actuator may be located anywhere in document editor 104. In one aspect, out-space actuator 106 provides "one-click" actuation of an out-space user interface. In this manner, a user is not required to navigate drop-down menus or lists to find out-space features.

[0039] FIGURE 2 represents one example of a secondary or out-space computer-generated user interface having a document information tab. Even though FIGURES 2-7 depicts tabs along the top of document editor 200, the tabs may be located on the sides, bottom and/or any other location within document editor. The tabs may also include buttons, quick links and/or other features not specifically depicted in FIGURE 2-7. Document editor 200 includes expanded ribbon 202, document image 204 and out-space actuator 206. Expanded ribbon 202 includes a plurality of ribbon tabs such as a document information tab, a document log tab, a share document tab, a print document tab, a getting started tab, and an application information tab. As shown in FIGURE 2, expanded ribbon 202 includes a greater display area than ribbon 102 of FIGURE 1. In one aspect, expanded ribbon 202 populates the display area that was utilized by document 104 before document 104 was removed from the display area. In another aspect, expanded ribbon 202 includes buttons and functionality that allows the user to work in expanded ribbon 202.

[0040] Document image 204 may include an image, a thumbnail, and a miniature bitmap of document 104. In another aspect, the entire in-space user interface is converted to an image, thumbnail, or miniature bitmap and moved to the out-space user interface. Document image 204 may be static or "non-live." Stated another way, a user may not be able to author document image 204 while in the out-space user interface. In one aspect, document 104 is converted to document image 204 when out-space actuator 106 is selected. In another aspect, document image 204 is displayed in expanded ribbon 202. In still another aspect, document image may provide a link back to the in-space user interface depicted in FIGURE 1. Stated another way, a user may navigate back to the in-space user interface of FIGURE 1 by selecting document image 204. Document image 204 may provide "one-click" actuation of an in-space user interface. In this manner, a user is not required to navigate drop-down menus or lists to find in-space features. In other aspects, out-space actuator 206 or any other type of button or selector may be selected to navigate back to the in-space user interface.

[0041] As depicted in FIGURE 2, document editor 200 may include document information tab. Document information tab may be associated with document image 204, quick features 208, document details pane 210, document task list pane 212, dates pane 214, related items pane 216, and people pane 218. Quick features 208 may include a new feature, an open feature, a save feature, a save-as feature, a close document feature, and an exit editor feature. Document details pane 210 may include fields for entering metadata

related to document 104. Such fields may include a title field, subject field, abstract field, author field, page number field, and a word count field. Document task list pane 212 may include a list of reminder tasks and fields for completing a project. Dates pane may include a set of fields for populating dates associate with benchmarks for a project. Related items pane 216 may include a list of items and fields for populating related items in document 104. For example, a related item may include a link to a webpage. People pane 218 may include a set of fields for providing access levels to people associated with document 104. For example, an access level may include no access, full access or partial access.

[0042] FIGURE 3 represents one example of an out-space user interface having a document log tab. Document editor 300 includes expanded ribbon 302, document image 304 and out-space actuator 306. As depicted in FIGURE 3, document editor 300 may include document log tab. Document log tab may be associated with document image 304 and document log pane 308. Document log pane 308 may include a list and fields associated with events related to a document. For example, documents log pane 308 may include a list of print dates, saving dates, sharing dates and/or any other document events that may be relevant in a log.

[0043] FIGURE 4 represents one example of an out-space user interface having a share document tab. Document editor 400 includes expanded ribbon 402, document image 404 and out-space actuator 406. As depicted in FIGURE 4, document editor 400 may include share document tab. Share document tab may be associated with document image 404, sharing task menu 408 and sharing pane 410. Share task menu 408 may include several features for sharing the document with other users. Sharing pane 410 may include a set of fields and functions for sharing the document. Sharing task menu may include sending pane 412, feedback pane 414, collaboration pane 416, and publishing pane 418. Sending pane 412 may include a send as attachment feature, a use document as message body feature, and/or a send document as fax feature. Feedback pane 414 may include a collect feedback feature, which routes the document to several people. Feedback pane 414 may also include a seek approval feature, which routes the document to several people and asks them to accept or reject the document. Feedback pane 414 may also include a send and track changes features, which emails a copy of the document and asks others to propose changes to include in the document. Collaboration pane 416 may include a workspace collaboration feature, which assigns owners to sections of the document. Collaboration pane 416 may also include a server collaboration feature, which

invites others to access a shared copy of the document. Publishing pane 418 may include a publish to blog feature and a publish to management server feature.

[0044] FIGURE 5 represents one example of an out-space user interface having a print document tab. Document editor 500 includes expanded ribbon 502, document image 504 and out-space actuator 506. As depicted in FIGURE 5, document editor 500 may include print document tab. Print document tab may be associated with document image 504 and print menu pane 508. Print menu 508 may include page layout pane 510, printer options pane 512, print selection pane 514, and print options pane 516. Page layout pane 510 may include a margins feature, an orientation feature, a size feature, a shrink page feature, and a view feature. Printer options pane 512 may include a field for selecting a printer and data associated with the status, type and location of the printer. Print selection pane 514 may include fields for selecting a portion of the document to print. Print options pane 516 may include fields for selecting how the document should be printed.

[0045] FIGURE 6 represents one example of an out-space user interface having a getting started tab. Document editor 600 includes expanded ribbon 602 and out-space actuator 604. Expanded ribbon 602 may not include a document image in that the getting started tab indicates that a document has not been generated yet. As depicted in FIGURE 6, document editor 600 may include getting started tab. Getting started tab may be associated with recent documents pane 606 and template pane 608. Recent document pane 606 may include a list of recently access documents. Templates pane 608 may include a plurality of selectable templates. In one aspect, the selectable templates are thumbnails and upon selection, the in-space user interface is automatically populated. Stated another way, the user is taken from the out-space user interface to the in-space user interface because the selection of a template indicates that the user desires authoring a document.

[0046] FIGURE 7 represents one example of an out-space user interface having an application information tab. Document editor 700 includes expanded ribbon 702 and out-space actuator 704. Expanded ribbon 702 may or may not include a document image depending on whether the document has been created. As depicted in FIGURE 7, document editor 700 may include application information tab. Application information tab may be associated with service pane 706. Service pane 706 may include online services associated with the document editor. Service pane 706 may include password features, online events, product trials, help features, security updates, diagnostics, training, etc.

[0047] FIGURE 8 represents one exemplary operational flow diagram for accessing an out-space user interface in a document editor program. Operational flow 800 begins at start operation 802 and continues to operation 804 where an in-space interface is provided that includes an out-space actuator. An example of an in-space interface may include FIGURE 1. Operational flow 800 continues to decision operation 806 where it is decided whether to enter out-space. If not, operational flow 800 continues to decision operation 808 where it is determined whether to exit the document editor. If it is decided to exit the document editor, operational flow continues to end operation 820. If it is decided to not exit the document editor, operational flow 800 loops back.

[0048] If it is decided to enter out-space, operational flow 800 continues to operation 810 where the out-space actuator is selected. When the out-space actuator is selected, the document is converted to an image, the ribbon is expanded and out-space features are populated in the user interface as indicated by operation 812. In another aspect, a document image is not created.

[0049] Operational flow continues to decision operation 814 where it is decided whether to return to in-space. If not, operational flow 800 continues to decision operation 818 where it is determined whether to exit the document editor. If it is decided to exit the document editor, operational flow continues to end operation 820. If it is decided to not exit the document editor, operational flow 800 loops back. If it is decided to enter in-space, operational flow 800 continues to operation 816 where the document image is selected. In another aspect, an in-space actuator is selected. Operational flow 800 then loops back to operation 804.

[0050] FIGURE 9 represents one example of an out-space user interface showing a number of document status information panes and associated application feature selection controls. As illustrated in FIGURE 9, a document status tab 905 is provided for displaying status information about the document being edited in the application in-space. As should be appreciated, the document status tab 905 is for illustration purposes only and is not limiting of the different types and locations of selectable controls for causing a display of document status information in the expanded ribbon 202, described herein. As should be appreciated, the document editor 200 may be configured for automatically displaying the document status information, illustrated in FIGURE 9, upon actuation of the out-space actuator 206.

[0051] Referring still to FIGURE 9, a number of document status panes or slabs 910, 912, 914, 916, 918 are displayed. The document panes 910-918 are illustrative of user

interface components in which various types of document status may be displayed in association with a document being edited in the document editor in-space.

[0052] According to one embodiment, features and/or functionalities associated with displayed document status may be exposed in proximity to the displayed document status for selectively accessing the associated features and/or functionalities for affecting changes to a given document status. As illustrated in FIGURE 9, selectable controls 911, 913, 915, 917, 919, 920 are illustrated as being displayed inside associated document status panes for selectively accessing features for affecting changes to document status displayed in the associated document panes 910-918. Accordingly, if a given type of document status is displayed in a document pane, for example, pane 910, and if an application feature or functionality is available for affecting a change to the displayed document status, a selectable control 911 may be displayed in the document pane for accessing the associated feature or functionality for affecting a change to the displayed document status. Alternatively, instead of providing a selectable control for accessing a given feature or functionality, information may be provided in the status pane as to the identity and nature of available features that may be utilized for affecting changes to the associated document status.

[0053] Referring still to FIGURE 9, status information and associated application features exposed via the document status panes 910-918 may include a variety of types of document status. For example, referring to the document status pane 910, information on a present security or protection status of the document may be provided. For example, as illustrated in FIGURE 9, if the present document has a security status that allows others to open and edit the document, a status string such as "this document may be edited by others" may be provided in the document status pane 910 for alerting a user that the present security status for the document allows others to edit the document rather than the document being in a "read-only" mode.

[0054] According to embodiments, in addition to providing the present status of the document, for example, the present security status of the document, information may be provided in the associated document status pane to alert the user that the user may make changes to the displayed status. For example, as illustrated in the document status pane 910, an additional string of "you can prevent others from editing this document" is provided to alert the user that the user may affect changes to the present security status of the document. Thus, the status information provided in the status panes 910-918 is made richer by explaining to a user what the impact of a change in the status could be which will

further promote the user's desire to use the available feature for changing the present document status.

[0055] If an application feature is available for affecting changes to the document status, the application feature may be exposed in the document status pane 910 in the form of a selectable control 911 for selectively accessing the available feature. For example, a "manage protection" control 911 is illustrated in the document pane 910. After the user reads the present document's security status and learns that the present document's security status may be changed, the user may select the "Manage Protection" control 911 for accessing the security features of the associated document editor application for making changes to the present security status. For example, the user may be allowed to encrypt the document, the user may be allowed to restrict formatting to the document, the user may be allowed to place the document in "read-only" mode, the user may be allowed to access an information rights management (IRM) application for setting various access and editing permissions on document, and the like. Advantageously, the user is provided useful status information about the document, and where a feature or functionality is available for changing the present status of the document, access to the feature or functionality is exposed in proximity to the provided status information, as illustrated in FIGURE 9.

[0056] Referring still to FIGURE 9, other types of document status and associated features are illustrated. For example, the document status pane 912 is illustrated for notifying a user that harmful content may be in the associated document and that the content has been disabled. As illustrated in FIGURE 9, an "Enable Content" control 913 is displayed in the status pane 912 for allowing the user to selectively enable the content that has been otherwise disabled due to its suspected harmful nature.

[0057] Another type of document status, illustrated in document status pane 914, is whether the present document has been saved in a file format that is somehow incompatible or otherwise problematic in association with the present document editor version in use. For example, the in-use document editor may be a later version than the version with which the opened document was saved, and therefore, some application features otherwise available may not be available for use with the presently opened document unless the presently opened document is converted to the later version. Accordingly, the status pane 914 may include a status string such as "you can upgrade this document's file format – some features of your application are disabled because this document is saved using an older file format – you can convert the current file format."

This display status text string not only provides the user with the present version status of the opened document, but alerts the user of the availability of a feature or functionality, for example, a document conversion feature, for affecting a change to the present status of the document. According to this example, because a document conversion feature is available, a "Convert Doc" control 915 may be displayed in the status pane 914 to allow the user to selectively access the document conversion feature for converting the opened document to the later version so that all of the features available to the later version of the document editor application may be used with the opened document.

[0058] The status pane 916 illustrates status information as to whether others are currently editing the present document. The user is also notified that he/she may contact other users of the document to coordinate with other users or otherwise communicate with other users of the document. As should be appreciated, this type of status may be provided when the document is available via a collaborative document sharing program that allows one or more users, for example, users in a collaborative work team, to open a given document and make edits to the document. The status illustrated in status pane 916 may be used to notify a given user that another user is currently editing the document, and an "Email or IM" control 917 may be provided for allowing the present user to send and electronic mail or instant message to other users of the document. As should be appreciated, email or instant messaging are only examples of two types of communication and are not limiting of other types of communication systems that may be provided.

[0059] Referring still to FIGURE 9, the document status pane 918 illustrates document status for notifying a user as to whether a document contains digital signatures, or whether a document's digital signature has been invalidated or otherwise compromised. For example, if a previous user has edited and finalized the present document, and has applied a digital signature to the document, the digital signature may be used to notify subsequent users that the user who has applied the digital signature has reviewed the document and has marked the document as final. The status information illustrated in status pane 918 may be used to notify a present user that such digital signature has been applied to the document. If the present user wishes to affect a change to the signature information applied to the present document, a "Digital Signature" control 919 may be provided for allowing changes to the digital signature status of the document. Other associated controls such as the "Mark as Final" control 920 may be provided for allowing the user to apply a status to the document to alert subsequent users that the document has been finalized by a previous user.

[0060] As should be appreciated, the types of document status and the associated selectable feature controls illustrated in FIGURE 9 are for purposes of example only, and are not limiting of the vast amounts and types of document status that may be displayed in a document status pane 910-918, and are not limiting of the vast numbers of associated features and/or functionalities that may be exposed in the status panes 910-918 for affecting changes to document status. For example, status information and related features and/or functionalities may be exposed via other document information panes available in the out-space user interface. For example, referring back to FIGURE 5, the print menu 508 could be used to expose temporary print settings being applied to the document. In addition, the location and configuration of the status panes 910-918 and the feature controls 911-920 are not limiting of the different orientations and layouts that may be utilized for providing the information and associated feature controls in the out-space 202 described herein.

[0061] According to an embodiment, information displayed in the document status panes 910-918 is dynamically maintained so that as associated status information changes for a document, the information displayed in the status panes 910-918 and the selectable feature controls 911-920 exposed for the associated status are changed as the document status changes. That is, as document status changes, a determination is made as to whether a different feature is available for use with the changed status, and if so, the different feature may be exposed with the dynamically updated status information. For example, referring to the status pane 910, if the presently edited document is in "read-only" mode, the status string may be changed to alert the user that the document is presently in "read-only" mode and that the user can change the protection status of the document to allow others to edit the document.

[0062] According to an embodiment, the document status provided in the document status panes 910-918 may be programmed to always be displayed when the document status tab 905 or other means for displaying document status is actuated, or individual types of document status or all document status may only be displayed when a given type of document status has changed or has met some threshold criteria for being displayed. For example, information associated with the disablement of harmful content, as illustrated in the status pane 912, may be programmed to only display in the out-space if harmful content has been recently disabled. On the other hand, such status may be set for display at all times in the out-space 202 for alerting users of the potential of harmful content in a given document. That is, the document status may have a permanent home in

the out-space user interface whether the status has changed or not, or the document status may be displayed in an associated document status pane only when a change has occurred in the associated status. For another example, the digital signature information illustrated in the status pane 918 may be programmed such that the information is only displayed if a change has occurred in the associated document that invalidates or otherwise compromises a previously applied digital signature.

[0063] FIGURE 10 represents another example of an out-space user interface showing a number of document status information panes and associated application feature selection controls. A document status pane 1010 is illustrated in figure 10 showing a logical grouping of available features for affecting a change to the present document status. The document status illustrated in the status pane 1010 is associated with the present security status of the document. For example, the status provided in the pane 1010 alerts the user that the document may be edited by others, and that the user may change the editing permissions applied to the document with a number of different document protection features. Selectable controls 1011, 1012, 1013 are provided in the expanded pane 1010 for providing the user access to the various document protection features available to the user for affecting a change to the present security status or editing permissions status of the document. For example, an "IRM" feature control 1011 may allow the user to apply various document editing permissions to the associated document. "Encrypt Document" control 1012 may allow the user to access a feature for applying an encryption to the edited document, and a "Restrict Formatting" feature 1013 may allow the user to access a feature for restricting formatting that may be applied to the document, for example, where the document is a standardized document that should not receive formatting changes by various users having access to the document. Thus, one status pane may be used for exposing a variety of different features or for mapping a given type of status to a variety of different features.

[0064] Referring still to FIGURE 10, the document status pane 916 is illustrated with a border 1015 disposed around the perimeter of the status pane 916. According to an embodiment, status information provided in a given status pane 910-918 may be designated with differing severity or importance levels. According to one embodiment, the border 1015 may be used to highlight or color-code the associated status pane 916 for alerting a user as to the severity or importance level applied to the displayed status. For example, status of low importance may be color-coded with a green border 1015, status information having a medium severity or importance level may be color-coded with a

yellow border 1015, and status information having a high severity or importance level may be color-coded with a red border 1015. For example, if a document is found to contain harmful content, for example, an unknown macro or ActiveX control, a status pane, such as status pane 912, illustrated in FIGURE 9, may be provided having a border 1015 or other appropriate identification mechanism for alerting the user that the status information is of sever or high importance to the user. As should be appreciated, the color-coding and the use of a border 1015 are for purposes of example only, and are not exhaustive of the many ways in which severity and/or importance levels may be indicated to a user. For example, a color-coded bar may be disposed along one end of the status pane or along and upper or lower edge of the status pane. Likewise, a variety of importance-level icons, for example, flags, stars, and the like, may be utilized for indicating severity and/or importance level.

[0065] FIGURE 11 represents an exemplary operational flow diagram for accessing document status and associated application features via an out-space user interface in a document editor program. Operational flow 1100 begins at start operation 1102 and continues to operation 1104 where an in-space user interface is provided that includes an out-space actuator, as described above. For purposes of example, consider that the operational flow 1100, illustrated in FIGURE 11, is associated with a user's desire to obtain one or more types of document status for a document being edited with the document editor 200.

[0066] Operational flow 1100 continues to decision operation 1106 where it is determined whether to enter the out-space user interface. If not, operational flow 1100 continues to decision operation 1108 where it is determined whether to exit the document editor. If it is determined to exit the document editor, operational flow continues to end operation 1120. If it is determined to continue editing the document, operational flow 1100 loops back. If the user has decided to enter the out-space user interface for obtaining one or more types of document status, operational flow 1100 continues to operation 1110 where the out-space actuator is selected. When the out-space actuator is selected, the document may be converted to an image, the ribbon may be expanded, and out-space features may be populated in the user interface, as illustrated and described above. According to another embodiment, and document image may not be created.

[0067] At operation 1112, after selection of the document status tab 905 or other appropriate actuation method for displaying document status, one or more types of document status may be displayed in associated document status panes 910-918, 1010, as

illustrated and described above with reference to FIGURES 9 and 10. In addition, if any features and/or functionalities are available for affecting change to displayed document status, one or more selectable feature and/or functionality controls 911-920, 1011-1013 may be displayed in the associated status panes, or alternatively, information about the identity and nature of available features or functionalities may be displayed in the status panes. After review of the displayed status and any available associated features, operational flow continues to operation 1114, and a desired non-authoring feature, for example, a feature for changing editing permissions to the edited document, may be applied for changing the associated status of the document.

[0068] According to an embodiment, after a given feature or functionality is utilized, the status information displayed in the associated status pane may be changed to reflect new status. For example, if based on the change in status, the selected feature or functionality may no longer be applicable, and therefore, that feature or functionality may be removed from the status pane. Alternatively, the associated status pane may be removed from display after a change in status. Or, after a change in status, the user may be automatically returned to the in-space user interface.

[0069] After document status has been reviewed and changed, if desired, operation flow proceeds to operation 1118 for a return to the in-space user interface or for an exit from the document editor. Operational flow ends at operation 1120.

[0070] As described above with reference to FIGURES 1-11, a variety of document information, including document status information may be provided via the out-space user interface. As described below with reference to FIGURES 12-14, communication between the out-space user interface and the in-space user interface is provided for alerting a user that information potentially of interest to the user is available in the out-space user interface. FIGURE 12 represents an example of an in-space user interface having an out-space communication user interface component and having an improved message bar user interface component.

[0071] According to embodiments of the invention, information displayed in one or more document information or status panes in the out-space user interface is dynamically updated as associated information about the document changes. As illustrated in FIGURE 12, an out-space communication user interface (UI) component 1210 is provided for communicating document status information contained in the out-space user interface to alert a user that the information contained in the out-space communication UI component represents a change in the document status that may be of interest to the user. For

example, the out-space communication UI component 1210, illustrated in FIGURE 12, contains an example text string 1215 of "Bob Smith has opened this document for editing."

[0072] According to embodiments, the out-space communication UI component 1210 temporarily displays in the in-space user interface to quickly relay the status information to alert the user that he/she should launch the out-space user interface to lean more about the status change of the document being edited. To allow the user to quickly launch the out-space user interface, the out-space actuator 106 is displayed in close proximity to or inside the out-space communication UI component 1210. As should be appreciated, the information contained in the temporarily displayed out-space communication UI component may be any information about the document that may be displayed in the out-space user interface as described herein with reference to FIGURES 1-15.

[0073] The out-space communication UI component 1210, illustrated in FIGURE 12, is generally rectilinear in shape and contains the out-space actuator 106 inside the UI component 1210. As should be appreciated, the shape and orientation of the UI component 1210, illustrated in FIGURE 12, is for purposes of example only and is not limiting of the vast number of shapes and orientations that may be used for the UI component 1210 and is not limiting of the locations at which the UI component 1210 may be placed in the in-space user interface for alerting a user of associated information contained in the out-space user interface.

[0074] According to one embodiment, the out-space communication UI component 1210 may be visually highlighted, for example, color-coding, addition of icons, and the like, for indicating a severity or importance level associated with the information being communicated from the out-space user interface. For example, a border 1220 disposed around the example UI component 1210 may be color-coded to indicate a severity or importance level associated with the information being communicated from the out-space user interface.

[0075] According to one embodiment, the communication UI component 1210 may be displayed temporarily, for example, N seconds, after it becomes visible, and the amount of time for the display of the UI component may be increased or decreased if desired. Alternatively, the UI component may be manually dismissed by selecting (e.g., "clicking") anywhere on the UI component 1210. In addition, selecting the actuator 106 for displaying the out-space user interface may cause an automatic dismissal of the UI component 1210. If desired, presentation of the communication UI component 1210 may

be accompanied by an audible sound for further calling attention to the information displayed in the communication UI component 1210.

[0076] Referring now to FIGURE 13, if a user selects the out-space actuator 106 displayed in or in proximity to the out-space communication UI component 1210, the out-space user interface is automatically launched, as described above, with reference to FIGURES 1-11. According to one embodiment, a document information or document status pane 1316 that contains document information or status associated with the communication that was presented via the temporarily displayed out-space communication UI component may be highlighted in a manner that brings a user's attention to the information or status pane 1316 associated with the information that was communicated via the temporarily displayed out-space UI component.

[0077] For example, as illustrated in FIGURE 13, the document status pane 1316 contains information that another user has opened the document being edited by the present user and provides the present user information on how the user may check out the document or change the status of the document in response to the information provided to the present user. To alert the user to the specific status pane associated with the communication provided to the user via the out-space communication UI component 1210, a visual indication, for example, a highlighted broken border, is displayed around the associated information or task pane. As should be understood, a variety of visual indications may be utilized for drawing attention to a particular information or status pane associated with the communication that was provided via the temporarily-displayed out-space communication UI component. For example, information or status panes associated with communications provided via the temporarily displayed out-space communication UI component may be color-coded with a particular color, for example, green, to quickly alert the user as to which information or status pane to review. As described above, color-coding may be used for information or status panes to indicate severity or importance levels associated with the information contained therein. To distinguish such visual indications from a visual indication used for associating a particular information or status pane with the communication presented via the out-space communication UI component 1210, a differing visual indication may be utilized.

[0078] Referring back to FIGURE 12, a message bar 1225 is provided for communicating information from document information contained in the out-space user interface and for alerting a user of a potential need for launching the out-space user interface to review additional information and to select one or more features or

functionalities for affecting non-authoring changes to the document being edited. As illustrated in FIGURE 12, the message bar 1225 is displayed underneath the ribbon 102 and remains displayed until the message bar 1225 is dismissed by user action, for example, by selecting the close button 1245. Information displayed in the message bar 1225 may include an information subject 1230 and an information summary 1235 for providing a subject and information summary of information communicated to the message bar 1225 from the out-space user interface. According to one embodiment, selecting (e.g., clicking on) the message text 1235 will launch the out-space user interface to allow a user to review the associated status information and to utilize any available features or functionalities, if desired. In addition, selectable controls 1240 may be provided in the message bar 1225 for selectively obtaining one or more features and/or functionalities for receiving additional information or for changing status or properties associated with the document being edited.

[0079] An icon 1206 may be provided in the message bar 1225 for drawing a user's attention to the specific type of status information contained in the out-space user interface that corresponds to the presently displayed message bar 1225. For example, if the status in the message bar is associated with document security information in the out-space user interface, the icon 1206 may be in a form that draws the user's attention to a status pane containing security information.

[0080] For example, as illustrated in FIGURE 12, an example information string indicating that the present document contains and invalid digital signature is provided in the message bar 1225, and a selectable control allowing the user to view signatures associated with the document is provided. Thus, if the user selects the provided control 1240, the user may be provided with the features or functionalities associated with a digital signature application to allow the user to view the digital signatures that have been applied to the document. As should be appreciated, the example information and selectable controls, illustrated in FIGURE 12, are for purposes of illustration only and are not limiting of the vast amount of information and features that may be made available via the message bar 1225.

[0081] The shape and size of a message bar 1225 may be scaled to fit different display screens. That is, the message bar 1225 may be reduced in size or may be expanded in size depending on the available display screen space. In addition, more than one message bar 1225 may be displayed as additional information is communicated that may be of interest to the user. That is, an additional message bar 1225 may be displayed

underneath the first message bar 1225 to communicate different types of document information or status in a second displayed message bar 1225.

[0082] Referring now to FIGURE 14, if the user selects the out-space actuator 1206 displayed in or in proximity to the message bar 1225, the out-space user interface is launched to allow the user to review additional information and to obtain different features or functionalities associated with the information that was communicated via the displayed message bar 1225. For example, as illustrated in FIGURE 13, a document status pane 1318 is shown to contain information corresponding to the information that was communicated to the in-space user interface via the displayed message bar 1225. As described above, a highlighting, for example, color-coding, or other acceptable visual indication may be used for the corresponding information or status pane 1318 for allowing the user to quickly determine the information or status pane containing information corresponding to the communication provided via the displayed message bar 1225.

[0083] As should be appreciated, a distinctive visual highlighting may be utilized for information or status panes 1318 associated with communications to the temporarily displayed out-space communication UI component, and a different visual indication may be utilized for information or status panes associated with communications provided via the displayed message bar 1225. Thus, when a user launches the out-space user interface, the user may readily distinguish an information or status pane associated with the temporarily displayed communication UI component as opposed to information communicated via the displayed message bar 1225. As illustrated in FIGURE 13, the information associated with the temporarily displayed UI component is shown with a broken outlining border, and the status pane associated with the displayed message bar is visually highlighted with a solid border. Other visual indications may be utilized to give the information or status pane associated with the temporarily displayed communication UI component a loud visual indication and for giving the information or status pane associated with the displayed message bar a louder or loudest visual indication.

[0084] FIGURE 14 represents an exemplary operational flow diagram for receiving a communication of document status via an out-space communication user interface component and via an improved message bar user interface component. For purposes of description of the operational flow diagram illustrated in FIGURE 14, consider that a user of a given document receives information via the temporarily displayed out-space communication UI component and/or via the displayed message bar user interface component. Operation flow 1400 begins at operation 1402 and continues to operation

1404 where an in-space user interface is provided that includes an out-space actuator. An example of an in-space user interface may include FIGURE 1. Operational flow 1400 continues to decision operation 1406 and a determination is made as to whether a temporary out-space communication UI component has been displayed. If not, operational flow continues to operation 1418, as described below.

[0085] If a temporary out-space communication UI component 1225 is displayed, operational flow continues to operation 1410. At operation 1410, a user may review information contained in the temporarily displayed out-space communication UI component 1225, and if desired, the user may select the out-space actuator for launching the out-space user interface. At operation 1412, the user may review associated document status or information, and at operation 1414, the user may apply non-authoring features and/or functionalities if desired. As described above, in order to alert the user as to the particular information or status pane contained in the out-space user interface associated with the communication provided the temporarily displayed out-space communication component, the associated information or status pane contained in the out-space user interface may be visually highlighted in some manner to indicate its relationship to the information provided to the user via the temporarily displayed out-space UI component.

[0086] At operation 1414, if the message bar 1225 is dynamically populated with information communicated from an associated information or status pane contained in the out-space user interface that is of interest to the user, operational flow may proceed back to operation 1410, and the user may launch the out-space user interface. At operation 1412, the user may review the associated document information or status pane, and at operation 1414, the user may apply one or more features or functionalities available for changing document information or document status provided in the out-space user interface. As described above, the associated information or task pane displayed in the out-space user interface associated with the information communicated to the user via the message bar 1225 may be visually highlighted in some manner to quickly alert the user as to the particular information or status pane associated with the information being provided to the user via the message bar 1225. After the user has reviewed any information or status contained in the out-space user interface of interest to the user, the user may return to the in-space user interface to continue editing the document, or the user may exit the document editor, and operational flow may end at operation 1420. Thus, use of the temporarily displayed out-space communication UI component or the displayed message bar UI component allows for information to be communicated from the out-space user

interface to the in-space user interface to alert a user of a given document that information contained in the out-space user interface may be of interest to the user.

[0087] By providing navigation between in-space and out-space, users may easily become familiar with out-space features because they are separated from authoring features. By separating in-space and out-space features, users may easily find features because the features are categorized. Features may be richer and provide more information and functionality because the "real estate" of the display is better utilized. A greater amount of "real estate" is available for out-space features, thereby allowing software developers the opportunity to increase the functionality of a document editor program. Channels of communication associated with a document are better managed because they are not mixed with in-space features.

[0088] Referring to FIGURE 15, an exemplary system for implementing the invention includes a computing device, such as computing device 1500. In a basic configuration, computing device 1500 may include any type of stationary computing device or a mobile computing device. Computing device 1500 typically includes at least one processing unit 1502 and system memory 1504. Depending on the exact configuration and type of computing device, system memory 1504 may be volatile (such as RAM), non-volatile (such as ROM, flash memory, and the like) or some combination of the two. System memory 1504 typically includes operating system 1505, one or more applications 1506, and may include program data 1507. In one embodiment, applications 1506 further include application 1520 for accessing an out-space user interface. This basic configuration is illustrated in FIGURE 15 by those components within dashed line 1508.

[0089] Computing device 1500 may also have additional features or functionality. For example, computing device 1500 may also include additional data storage devices (removable and/or non-removable) such as, for example, magnetic disks, optical disks, or tape. Such additional storage is illustrated in FIGURE 15 by removable storage 1509 and non-removable storage 1510. Computer storage media may include volatile and non-volatile, 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. System memory 1504, removable storage 1509 and non-removable storage 1510 are all examples of computer storage media. 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, magnetic cassettes, magnetic tape, magnetic disk storage or other magnetic storage

devices, or any other medium which can be used to store the desired information and which can be accessed by computing device 1500. Any such computer storage media may be part of device 1500. Computing device 1500 may also have input device(s) 1512 such as a keyboard, mouse, pen, voice input device, touch input device, etc. Output device(s) 1514 such as a display, speakers, printer, etc. may also be included.

[0090] Computing device 1500 also contains communication connection(s) 1516 that allow the device to communicate with other computing devices 1518, such as over a network or a wireless network. Communication connection(s) 1516 is an example of communication media. 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" may include 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 may include wired media such as a wired network or direct-wired connection, and wireless media such as acoustic, RF, infrared and other wireless media. The term computer readable media as used herein includes both storage media and communication media.

[0091] Although the invention has been described in language that is specific to structural features and/or methodological steps, it is to be understood that the invention defined in the appended claims is not necessarily limited to the specific features or steps described. Rather, the specific features and steps are disclosed as forms of implementing the claimed invention. Since many embodiments of the invention can be made without departing from the spirit and scope of the invention, the invention resides in the claims hereinafter appended.

CLAIMS

What is claimed is:

1. A method of exposing document features in association with status information for a document, comprising:

providing an in-space user interface having an out-space actuator (106) associated with the in-space user interface, wherein the in-space user interface includes a document display area (104) for creating and editing a document; (804,1104,1404)

receiving a status of the document; (804,1104,1404)

determining a non-authoring feature that may be utilized for changing the status of the document; (804,1104,1404)

receiving a selection of the out-space actuator; (810,1110,1410)

in response to receiving the selection of the out-space actuator, displaying an out-space user interface (202); (812,1112,1412)

displaying the status of the document in the out-space user interface; and (812,1112,1412)

displaying information about the feature that may be utilized for changing the status of the document in the out-space user interface with the displayed status of the document. (812,1112,1412)

2. The method of Claim 1, wherein displaying the status of the document in the out-space user interface includes displaying an explanation of how the status of the document may be changed by utilizing the determined features that may be utilized for changing the status of the document (1010). (812,1112,1412)

3. The method of Claim 1, wherein displaying the status of the document in the out-space user interface includes displaying the status of the document in a document status display pane (910,912,914,916,918) that is displayed in the out-space user interface. (812,1112,1412)

4. The method of Claim 3, further comprising displaying a selectable control (911,913,915,917,919,920) in proximity to the displayed status of the document for accessing the feature for changing the status of the document. (812,1112,1412)

5. The method of Claim 4, wherein displaying a selectable control in proximity to the displayed status of the document includes displaying the selectable control in the document status display pane. (812,1112,1412)

6. The method of Claim 5, wherein displaying the status of the document in a document display pane includes applying a visual indication (1015) to the document status display pane to indicate an importance level associated with the displayed status of the document. (812,1112,1412)

7. The method of Claim 3, further comprising dynamically updating the status of the document displayed in the document status display pane as the status of the document changes. (812,1112,1412)

8. The method of Claim 3, further comprising determining a plurality of features that may be utilized for changing the status of the document. (812,1112,1412)

9. The method of Claim 8, further comprising displaying a selectable control for each of the plurality of features that may be utilized for changing the status of the document in the document status display pane as a logical grouping of feature controls for accessing each of the plurality of features for changing the status of the document. (812,1112,1412)

10. The method of Claim 1, wherein receiving a status of the document includes receiving information as to any restrictions on access (910) to the document applied to the document. (812,1112,1412)

11. The method of Claim 1, wherein receiving a status of the document includes receiving information as to whether any digital signatures have been applied to the document (918). (812,1112,1412)

12. The method of Claim 11, wherein receiving a status of the document further comprises receiving information as to a status of any digital signatures applied to the document. (812,1112,1412)

13. The method of Claim 1, wherein receiving a status of the document includes receiving information as to whether the document is being edited by more than one user (916). (812,1112,1412)

14. The method of Claim 1, wherein receiving a status of the document includes receiving information as to whether any previous versions of the document are available for use (308). (812,1112,1412)

15. The method of Claim 1, wherein receiving a status of the document includes receiving information as to an edit mode applied to the document. (812,1112,1412)

16. The method of Claim 1, wherein receiving a status of the document includes receiving information as to a file format with which the document was generated. (812,1112,1412)

17. A computer readable medium containing computer-executable instructions which when executed by a computer perform a method of exposing document features in association with status information for a document, comprising: (1400)

receiving a status of a document being edited in a computer-generated user interface; (1404)

determining a non-authoring feature that may be utilized for changing the status of the document; (1404)

launching a secondary computer-generated user interface (1210,1225) for displaying the status of the document; (1406,1418)

displaying the status of the document in the secondary computer-generated user interface; and (1412)

displaying information about the feature that may be utilized for changing the status of the document in the secondary computer-generated user interface with the displayed status of the document. (1412)

18. The computer readable medium of Claim 17,

wherein displaying the status of the document in the secondary computer-generated user interface includes displaying the status of the document in a document status display pane (1316) that is displayed in the secondary computer-generated user interface; (1412) and

wherein displaying information about the feature that may be utilized for changing the status of the document in the secondary computer-generated user interface with the displayed status of the document includes displaying a selectable control (917) in the document status display pane (1316) for accessing the feature for changing the status of the document. (1412)

19. A method of exposing document features in association with status information for a document, comprising:

receiving a status of a document being edited in a computer-generated user interface; (1404)

determining a non-authoring feature that may be utilized for changing the status of the document; (1404)

launching a secondary computer-generated user interface for displaying the status of the document; (1406,1418)

displaying the status of the document in a document status display pane that is displayed in the secondary computer-generated user interface; (1412)

displaying a selectable control in the document status display pane for accessing the feature for changing the status of the document; and (1412)

monitoring the status of the document, and dynamically updating the status of the document displayed in the document status display pane as the status of the document changes. (1412)

20. The method of Claim 19, wherein in response to dynamically updating the status of the document displayed in the document status display pane as the status of the document changes, determining whether a different feature is available that may be utilized for changing the dynamically updated status of the document, and if a different feature is available that may be utilized for changing the dynamically updated status of the document, displaying a selectable control in the document status display pane for accessing the different feature that may be utilized for changing the dynamically updated status of the document. (1412)