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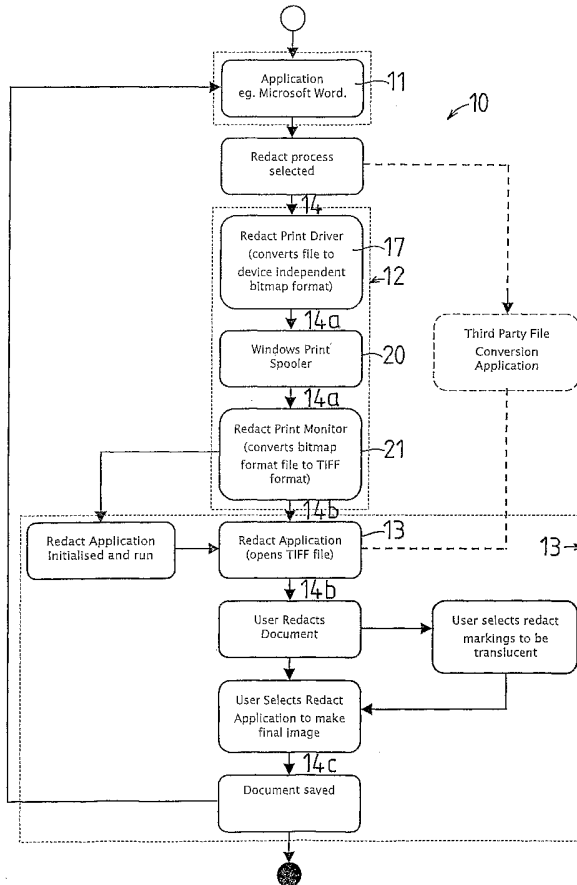
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(54) Title: A PROCESS FOR ELECTRONIC DOCUMENT REDACTION



(57) Abstract: A redaction process (10) to enable a user to redact an electronic document on a computer. The redaction process (10) includes the steps of converting a copy of the original electronic document file (14) from its native format into the format of an electronic image file. The user may redact sections of the electronic image file, and save the redacted electronic image file in electronic file format.

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TITLE OF THE INVENTIONA PROCESS FOR ELECTRONIC DOCUMENT REDACTIONBACKGROUND TO THE INVENTION

5

This invention relates to a process for electronic document redaction.

Businesses around the world are having to cope with the increasingly regulated business world, particularly in regard to their responsibilities and accountability to their Board of Directors, shareholders, and customers.

10

These new regulations, which promote an increasing transparency of the business processes and activities, require businesses to release for public scrutiny, documents that may contain information that is commercially sensitive, or information that is confidential to the business.

15

Business transparency ensures that there is accountability in the decision making process, to remove, or reduce the possibility of one or more persons making business decisions for their own gain at the expense of the organisation.

20

Government departments, governmental agencies, and the public sector in general desire, or are required to release documents that may contain sensitive or confidential information, for public scrutiny. In order for these documents to be

released, particular information must be removed so that, for example, parties named in the document are not disadvantaged by the release of the document, and the information contained within. Some of the types of information that may require redaction are names of children or family members, financial accounting
5 information, etc.

Document compliance is a requirement of best business practice, for example, the Sarbanes Oxley in the United States, and various other acts for example, the Freedom of Information and Privacy Acts that are in force in designated territories.
10 Compliance is also required for international record keeping standards from the United States such as the Department of Defence 5015.2, United Kingdom's Public Records Office 2002, and European Moreq.

In order to comply with the aforesaid business regulations and best business
15 practice, documents that are required to be redacted must be done so according to the legal, processing, and reporting requirements, as required by the aforesaid standards. In some instances, where information is to be redacted from a document, markings are to applied to the document where information is removed.

20 There are known methods by which to redact documents. One method is by using a paper based method, where the paper document is reproduced, redacted, then reproduced again for distribution. Any information below the redaction marking of the distribution copy will not be recoverable within this document. This method may

be acceptable in a small organisation where there is a relatively small amount of documentation to be redacted, however in a large organisation, where most documents are now held as computer files, a computer based method is required for business processes, ease of use and storage of the large numbers of documents
5 used.

There are computer applications available for office use, on which documents are created and edited. An example of such applications are Microsoft Word and Adobe Acrobat. These applications also provide the facility for a user to redact documents,
10 however, where Adobe Acrobat is used, a third party plugin must be used in order to redact a document in PDF format. However, the correct computer applications and methods must be used to securely redact documents.

Electronic documents created with the aforementioned types of application contain
15 hidden data known as metadata, consisting of revision history and other data, within the file of the electronic document. Thus, where a document has been redacted, the redacted information may still be contained within the electronic file. The skilled addressee will therefore be able to recover text within the document that was previously changed or deleted. Therefore, redaction of documents with standard
20 office computing tools is an unsecure method, and cannot be relied upon to remove all of the redacted information from the document, as in some cases a copy of the redacted electronic document itself may be publicly released.

Other known methods of document redaction are scanning the paper document, and thereby converting this document into an image file. In order to redact this image file, the user must use graphic manipulation software such as Adobe Photoshop. However, this method is relatively slow, and the user must have access to the specialised graphic manipulation software which is not only complex to use, but expensive to purchase. The user must also be proficient in its use in order to achieve the desired result.

Traditional redaction processes have a number of disadvantages. One disadvantage is that traditional electronic redaction processes merely make invisible, on the face of the document, the text that has been redacted. Although the text is removed from view, it may still reside within the document's electronic file as hidden data.

Another disadvantage is that redacted data residing within a document's electronic file can be easily recovered by the skilled addressee.

A further disadvantage is that redaction using paper based methods is slow, inconvenient for large organisations, and poses storage problems for the large numbers of files held.

Yet another disadvantage is that where large organisations must redact many documents, the documents to be redacted may not be held in a central repository at

any particular branch of the organisation. Therefore, it may prove to be very difficult for one or a small number of users in one location to redact these documents.

SUMMARY OF THE INVENTION

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It is therefore an object of the present invention to provide a process for the redaction of electronic computer documents that completely removes from the documents electronic file, all traces of the redacted text etc, or at least a process for redaction which provides the public with a useful choice.

10

Broadly according to one aspect of the invention there is provided a redaction process to enable a user to redact an electronic document on a computer, said process including converting a copy of the original electronic document file from its native format into the format of an electronic image file, redacting sections of the electronic image file, and saving the redacted electronic image file in electronic file format.

15

According to another broad aspect of the invention there is provided a computer programmed to enable a user to redact an electronic document including means to convert a copy of the original electronic document file from its native format into the format of an electronic image file, means by which to redact the electronic image file, and means to save the electronic image file in electronic file format.

20

Preferably the applications to be used with the redaction process of the invention are based on, and compatible with, the Microsoft Windows computer operating system.

In the following more detailed description of the invention according to preferred
5 embodiments, reference will be made to the accompanying drawings in which:-

BRIEF DESCRIPTION OF THE DRAWINGS

10 Figure 1 is a schematic diagram of a computer system incorporating the invention,

Figure 2 is a screen shot of the application software of Figure 1 with original document open,

15 Figure 3 is a screen shot of the application software of Figure 1 printing the application file,

20 Figure 4 is a screen shot of the application software of Figure 1 during the process of converting the original file into a format for use by the redaction software of Figure 1,

Figures 5 is a screen shot of the converted original document opened by the redact software of Figure 1

Figure 6 is a screen shot of the redacted original document,

5

Figure 7 is a screen shot of the redaction software's user prompt to save the redacted file,

Figure 8 is a screen shot of the redaction software illustrating translucent redaction markings,

10

Figure 9 is a screen shot of the application software of Figure 1 with original document open,

15

Figure 10 is a screen shot of the application software of Figure 1 which confirms the search terms to be used to automatically redact the document,

Figure 11 is a screen shot of the converted original document that has been automatically redacted,

20

Figure 12 is a screen shot of the converted original document during the process of saving a review or final copy of the document,

Figure 13 is a screen shot of the redaction software's user prompt to save the review or final copy of the redacted document,

Figure 14 is a screen shot of a final copy of the redacted document,

5

Figure 15 is a schematic diagram of a computer system incorporating an alternative embodiment of the invention, and

Figure 16 is an overview of the web based implementation of the redact software application.

10

DESCRIPTION OF PREFERRED EMBODIMENTS OF THE

INVENTION

15 According to one embodiment of the invention there is provided a redaction process for the removal of sensitive information within an electronic computer document, such that when the computer document has been redacted, the redacted information is completely removed from the file, and thus be unrecoverable from the electronic file.

20

This process can be likened to the electronic version of a paper based redacting process, whereby the page is copied, redacted, and copied again, with this final copy

being publicly released. Thus no trace of the redacted information can be found within the redacted copy.

It will be apparent to the skilled addressee that there are many different types and
5 versions of computer operating systems in use by both the personal user and the corporate environment, and it will be apparent to the skilled addressee that computer software may be written and compiled for use on different computer operating systems. The Microsoft Windows operating system is described as being used.

10

As installed onto a computer, the components that interact with each other thereby allowing the redaction process 10 to be accomplished, according to a preferred embodiment, is illustrated in Figure 1.

15 The process contains at least three components or subsections as illustrated in Figure 1. These are the application software 11 from which the user may create and edit an electronic document, a method for converting the original document file to an image by, for example, the operating systems printing functionality 12 which enables the system to convert the original document to an image document, and the
20 redaction software 13, in which, the redaction process is undertaken, and in which the image file is saved.

It will be apparent to the skilled addressee that there are many different types and kinds of application software available, and that each application produces electronic documents with file types specific to that application. For example a Microsoft Word document is of the type MyDocument.doc, and an AutoCAD drawing file is of the type MyDocument.dwg – the file types of each application are not compatible with each other.

The application software 11 that a person uses to create and edit an electronic document can be of any type and kind that is compatible with the Microsoft Windows computer operating system. Typically, a person will open the desired software application 11, create an electronic document, and save this document on their respective computers hard drive or data storage device for later viewing or editing.

It will be apparent to the skilled addressee that the Microsoft Windows computer operating system has inbuilt printing functionality. Therefore, the methods by which the operating system handles printing jobs will not be described in detail.

It will be apparent to the skilled addressee that the redaction application software will be loaded onto a local computer for redacting documents located on that computer, or over the local area network to which the computer is networked. In another form of the invention, third party webstreaming software may be integrated with the redaction application software, thereby enabling the user of a local machine to efficiently redact documents located on a remote computer, via the internet.

In one form of the invention, the redaction application software 13 will typically be loaded onto a users individual computer, and at the time of installation, the redaction software 13 will search for and detect the most commonly used Microsoft
5 Windows compatible applications installed on the host computer. Commonly used application may be Microsoft Office Products such as Word, Excel, PowerPoint, Access and email documents. The redaction software will thus be available for use in conjunction with any of these Microsoft Windows compatible applications.

10 The redaction application will enable toolbars to be integrated into the user interfaces of the aforementioned applications. Where the aforementioned applications interfaces do not support toolbars, then the functionality can be accessed through the print functionality, as will be described later in the specification.

15

In one embodiment, the redaction application will be available for use through a shortcut to the application being placed on a pop up menu, as accessed by right clicking a file within Windows Explorer.

20 There are a number of different methods by which to start the redaction application, described below is but one method.

In use, the user will open the application 11 in which the document they would like to redact has been created, for example Microsoft Word, and open the respective electronic document 14.

5 Once the application 11 opens, within the user interface of the application 11, and visible on the computer screen, a toolbar 15 will be visible for the activation of the redaction application 13. Once the electronic document 14 the user wishes to redact is open, the user selects the redact document button 16 on the toolbar 15.

10 It will be apparent to the skilled addressee that the printing functionality provided to the redact software, and denoted by numeral 12, can be achieved by standard Windows programming techniques, using the inbuilt printing functionality provided by the Windows computer operating system.

15 It will be apparent to the skilled addressee that there are known methods by which to convert an electronic file in a particular format, to one of a different format. Illustrated below is but one such method.

The redact printer driver 17 operates in the same way as a conventional Windows
20 printer driver within the operating system. However, the print output file is not sent to an external printer, but through the windows printing functionality 12, and to the redaction application 13.

By the use of a dedicated Windows print driver to generate an image of the original document, an image of any document created by a Windows compatible application can be created, irrespective of each application's native file type.

- 5 The redact printer driver 17 is called, by the activation of the "RaapidRedact document" button 16, and run. A print dialogue box 18 is displayed on the users computer screen.

Print dialogue box 18 is a standard Windows component. It also provides the user
10 the option to custom configure print settings as desired. When the user is ready to print, the ok button 19 is selected.

The redact print driver 17 converts the original document 14 into a device independent bitmap 14a, which is then passed to the Windows print spooler 20. The
15 spooler 20 passes the file 14a to the redact print monitor 21.

The redact print monitor 21 converts the device independent bitmap file 14a into, preferably a TIFF (tagged image file) format, as this is a popular and flexible public domain raster file format, and outputs this TIFF format file 14b to the redaction
20 application. The electronic file 14b produced at this stage of the process is merely a "picture" of the original document, and can be likened to the photocopy of a paper page.

Concurrent with the above operation, a dialogue box 22 containing a progress bar is displayed on the users computer screen. This indicates to the user that the system is processing the request, and the document 14b is being prepared for the use by the redact application 13. As is standard programming practice, within dialogue box 22,
5 a button is provided to enable the user to cancel the process as desired.

As the aforementioned "printing" process 12 is running, the redact print driver 17 sends a call to the redaction application 13. This call initialises and runs the redaction application 13 once the file, in TIFF format, is released from the print
10 monitor 21. The redact application 13 user interface opens in a new viewing window on the users computer screen, and the picture of the original document 14b which has been created by the printing process 12, is opened by the redact application 13 in this window.

15 On the redact application 13 user interface is a toolbar 23, on which is found the applications function buttons. Upon selecting button 24, a pull down menu (not shown in the drawings) is displayed on the screen. From this pull down menu the user can select the desired pen type/width or shape that will be used to redact the text 25 within the image 14c. For example, a circle or elliptic shape can be selected,
20 or a narrow or wide line can be drawn over the text 25 etc to be redacted.

After the user selects the pen style in which to redact with, the user highlights the sensitive sections of text with their pointing device, for example, a computer mouse

or electronic pen. The redacted text is covered, in one embodiment, preferably by a one hundred percent (100%) solid black mark 26, as is illustrated in Figure 6.

At the positions marked on the image by the user, the pixel values corresponding to the redact markings are changed in value from those representing text etc within the image, to values representing a single shade, which can be, for example, solid black.

At any point in the redact process, where a redact marking is incorrectly placed, this marking may be moved or removed by the user, provided that the user has not saved the image.

Once the user has, in the manner described, successfully redacted the text etc on the selected page, and is confident there is no visible sensitive data remaining within the image, the user selects the "next" button 27 with their pointing device.

15

Upon activation of this button 27, the redaction application 13 makes final the image, and prompts the user to save a copy of this final image onto the storage device within their computer, by the display of a Windows save dialogue box 28.

20 To make the redacted changes to the image permanent the redaction application 13 saves the value of each pixel which makes up the image. Each pixel is assigned a value, the value of which relates to a visible colour. Therefore, at areas in the document 14c where there are redaction markings 26, the pixels in the image

relating to these sections have their values changed from those representing the text and background colour, to a single value representing the redact mark 26.

By this process, the value of each pixel in the image is saved, thus, all trace of the
5 pixel values in the original image, corresponding to that text which was redacted, are overwritten with a new value, thereby leaving no trace within the image of the previous pixel values.

Once the redacted image has been saved according to the above description, there is
10 no possibility of further adding or deleting redaction markings to this saved redacted image. In the event the user has made any error in redacting the document, the process must be restarted from the beginning.

The document 14c remains open through the aforementioned process of saving a
15 copy of the redacted image. Thus the user may desire to create a further copy of the redacted image with the solid redact markings 26 shown translucent, for the purposes of retaining on file.

Once an electronic document has been redacted, there is, according to some
20 standards, the requirement for the organisation etc to keep a copy of the redacted document. The redaction software has the facility, by the user selecting button 29 with their pointing device, to display the solid redact markings 26 as translucent markings 30, as is illustrated in Figure 8. This allows a person/persons within the

organisation to view the entire document, and being able to view the text/drawings etc that have been redacted.

Preferably the translucent shade will be a shade that is the same colour as the solid
5 redact markings, and could, for example, be, say, fifteen percent (15%) solid. In this manner, the marking will take on the appearance of a translucent shade.

In order for the solid redact markings 26 to be illustrated as translucent, the redaction software 13 detects within the image the positions of all the user applied
10 redact markings 26. At these positions, the application 13 executes a routine within its software to change the shade of the solid redact markings 26, from, for example one hundred percent (100%) solid black, to a fifteen percent (15%) solid, which takes on the appearance of a shade of grey. This translucent shade allows for the black text to appear to be visible through the translucent mark 30, as displayed on the
15 users computer screen, and illustrated in Figure 8.

In order for the redacted text etc 25 to appear to be visible through the translucent marking 30, the software must take steps to place the translucent marking 30 behind the text 25. Thus, the text 25 will appear to be visible through the
20 translucent marking. Effectively, it will appear as if the background of the text 25, at positions corresponding to the redact markings 30, will be changed.

To make the image permanent and to save the document, the user undertakes the same process to save the document as that described above.

In another form of the invention, the redaction process and its method of operation is as described above. However, in this embodiment of the invention, there is functionality which thereby allows a user to automatically redact an electronic document upon activation of the redaction process 10. Key search words to be redacted are pre-programmed into the redaction application software, and these words are initially redacted from the electronic document, as will be apparent in the following description.

In use, a person opens the application software 11 in which the document they would like to redact has been created, for example, Microsoft Word, and opens the respective electronic document 14, as illustrated in Figure 1.

As described above, within the user interface of the application 11 and visible on the computer screen, a toolbar 15 will be visible for the activation of the redaction application 13. The person selects the redact document button 16 on the toolbar 15.

The redact print driver 17, windows print spooler 20, and redact print monitor 21 within print subsection 12, are subsequently called, and run, to create a TIFF image of the electronic document. The method by which this is performed is described above.

Included within the print subsection 12 is functionality that extracts text and its associated location data from the original document 14. this may be performed by any known means.

5

It will be apparent to the skilled addressee that there are many methods by which text and its associated location data may be incorporated in the TIFF image file. The method of embedding this data within the TIFF image file is described herein and with reference to the accompanying drawings.

10

The text and its location data is subsequently embedded within the TIFF image created from the electronic document 14.

15

Once the location data has been embedded in the TIFF file 14e as previously described, a pop up dialog box 32 titled RapidRedact Search Terms 32 is displayed on the persons computer screen, as illustrated in Figure 10.

20

This dialog box 32 may contain typical search terms 31 that a person may commonly redact from electronic documents. This feature thereby saves the user time in that the search terms 31 may be automatically redacted from the electronic document, as will be described hereinafter.

The person has the opportunity to add or delete search terms 31. The person subsequently presses the OK button 33 to proceed with redaction of the TIFF file 14e as illustrated in Figure 10.

- 5 Upon pressing the OK button 33, the redact software 13, by use of the text and text location data located within the TIFF file 14f, will locate all of the search terms 31 entered by the user within the TIFF file 14f.

All search terms located within the TIFF file 14f will be redacted by the redaction
10 software 13, thus resulting in a rectangular and translucent shade of grey 30 covering the space occupied by the search terms 31.

The redaction application 13 executes a software routine that ensures that the search term 31 is visible through the translucent redaction marking 30. In this way,
15 the redact software 13 places the translucent redact marking 30 behind the text 25, effectively making it appear as if the text 25 is visible through the redaction marking 30.

Once this information has been removed, the TIFF document is opened in the redact
20 software application interface, as illustrated in Figure 11.

At this time, a user may select the rectangle redaction tool 34 from the toolbar 35, and further redact the TIFF file 14g as desired.

Each redaction marking applied by the rectangle redaction tool 34 is applied as a translucent marking 30. The method of making the text visible through the translucent marking 30 has been described above.

5

Once the person has completed redaction of the TIFF file 14g, the redacted document 14g may be saved as a final document 14c, as illustrated in Figure 1. In the final document 14c, all of the translucent redaction markings 30 are shown as solid black 26.

10

During the stage of making final the document, ie saving the document in final form as a PDF document, the redaction software 13 will execute a routine that searches and locates all of the text and location data embedded within the document. The text and location data corresponding to the redacted text within the document will be removed from the final document, and will thus not be recoverable.

15

The remaining text and location data embedded within the final file may be considered to be non-sensitive. Therefore, the remaining text and location data may be removed from the final document.

20

Preferably, the non sensitive text and location data embedded within the final document will remain within the document. This results in the final PDF document containing non sensitive text that is searchable. As described above, redacted text

will not be searchable, as all reference to redacted text has, as described above, been removed from the document.

An alternative to creating a final document is to create a review file. A review file
5 allows the person to further redact the document at a later time, or remove translucent redaction markings 30 from the document.

A review file is particularly useful for management to review the redaction process, before the documents are saved as final redacted documents.

10

To create a review file 14h from the redacted document, the next button 27 on the user interface is selected. An output type dialog box 36 is displayed. The review file option 37 is chosen, and the ok button 38 selected. This is illustrated in Figure 12.

15 The user is then prompted by a Windows Save As dialog box 28, as illustrated in Figure 13, to select the destination on the local computer to which the review file 14h will be saved. The user also has the option of selecting a meaningful name for the review file 14h.

20 It will be apparent to the skilled addressee that the review file 14h may have any alphabetic extension appended to the end of the file name, as is typical computing practice. As is described herein the review file extension is in the form MyDocument.rxf

The review file is saved by the user.

To open the review file 14h and thus further redact the file, a person navigates to the
5 location in which the review file 14h has been saved. By using a pointing device, for
example a mouse, the person double clicks to open the file. The file 14h opens
within the redact software 13 application window, as illustrated in Figure 11.

The person may thus further redact the document by adding or deleting redaction
10 markings 30 as desired.

Upon completion of redaction of the document 14h, a final version of the document
14c can be created. In this form, the translucent redaction marking 30 will be shown
as solid, as illustrate in Figure 14.

15

The person presses the next button 27 on the user interface. An output type dialog
box 36 appears, as illustrated in Figure 12. The output type is set to, for example,
PDF 39. The ok button 38 is subsequently selected.

20 Upon activation of this button, the redaction application 13 makes final the image,
and prompts the user to save a copy of this final image onto the storage device
within their computer, by the display of a Windows save dialog box 28. The final
image is illustrated in Figure 14.

To make the redacted changes to the image permanent, the redaction application 13 saves the value of each pixel which makes up the image. Therefore, in areas within the document corresponding to translucent redaction markings, the pixels in the image relating to these section have their values changed from those representing the text and background colour, to a single value representing the redact mark.

By this process, the value of each pixel in the image is saved, thus, all trace of the pixel values in the original image, corresponding to that text which was redacted, are overwritten with a new value, thereby leaving no trace within the image of the previous pixel values.

A further option provided by the redaction software is to allow a person to generate an audit copy of the redacted document. The option on the output type dialog box 36 corresponding to create an audit copy 40 is checked, as illustrated in Figure 12. Consequently, upon selecting the ok button 38, an audit file is created for example, as a PDF document.

An audit copy can be created at any time, and in conjunction with either a review file or final document.

The audit copy may be retained on file by the user as a record of what was redacted from the document. All redaction markings within the audit copy remain translucent, so that redacted text may be easily read.

5 In a further embodiment of the invention, the redaction software 13 may be initiated within a web browser 41, and operating in conjunction with a serverside based webstreamer 42, to allow a person to efficiently redact documents accessible via the internet 43 from a remote location. An overview of this implementation is illustrated in Figure 16.

10

In use, the user opens their internet browser 41, and navigates to a designated web address.

It will be apparent to the skilled addressee that the RapidRedact active x client is
15 software that has the same functionality as the redact software 13 described above. However, as is herein described, the redact software is in the form of an active x client.

The interaction between the internet browser 41 software and the Web Server 42
20 software results in HTTP download of the desired RapidRedact page 44 to the user, along with the RapidRedact ActiveX client, if not already present on the user's computer. This page invokes the RapidRedact client within the browser 41, passing it a reference to the document to be redacted.

The RapidRedact client parses the string that it received from the browser, and thus determines the address of the RapidRedact Webstreamer 42 that should be queried. It then sets up communications through the designated port on the Webstreamer 42 machine and bi-directional communications are established.

Once the connection is made to RapidRedact Webstreamer 42, then the RapidRedact client (running within the web browser 41 on the users computer) starts sending requests to the RapidRedact Webstreamer 42 software (on the RapidRedact Webstreamer computer 42), and receiving responses, via OTTP, where OTTP is a web streaming protocol. This protocol is similar to that of HTTP, FTP, etc, having been developed by Onstream Systems Limited.

The user logs into RapidRedact. Optionally, the RapidRedact client queries the RapidRedact Webstreamer 42 software to establish whether the user at the client computer is actually allowed access. To do this, it will transmit the string that it received from the page on the Web Server, and possibly user logon details as well. In the latter case, the user is authenticated by the RR Server via the Authentication API.

If access is granted, then the RapidRedact 45 server presents the user with their list of documents 44 to be reviewed. The RapidRedact Webstreamer 42 software determines, from the pre-configured RapidRedact Webstreamer 42 Configuration

Information, which Data Provider Module is responsible for providing the documents implied by the request string.

In response to the user selection of files 44 to view, the server 45 requests the
5 document 44 from the controlling application and opens it at the server 45. It then extracts the requested pages 44a of each document 44, and streams these to the user via the internet 43.

The user redacts the document as desired. Upon completion of the redaction
10 process, the RapidRedact client on the users computer streams the redactions back to the server 45 which embeds them in the waiting document 44. The server 45 redacts the document 44 and supplies the appropriate output to the controlling application.

15 In this way, a user can remotely access and redact large numbers of documents very efficiently.

To address the issues of security where documents containing sensitive data is being transmitted via the internet, data encryption is used. This ensures that all data
20 transmitted to and from the server is secure, and inaccessible to unauthorised persons.

The redaction software is open to modification as will be apparent to the skilled addressee.

According to an alternative embodiment, the redaction software may be written and
5 compiled to be compatible with alternative computer operating systems that are available. For example, these may be the Linux, Solaris, or Mac OS X operating systems.

According to another embodiment, the redact print driver may be designed and
10 written so that it may convert the original application file into a TIFF file format.

According to a further embodiment the redaction software may use an external conversion tool for converting the original application file type into an image format.

15 According to another embodiment, where an original document is not in electronic format, the document may be scanned by any known means, with an electronic file corresponding to the original document being created. Optical character recognition (OCR) software may be used to extract text and location data from the scanned file.

20 The scanned file will subsequently be converted to TIFF format, whereby the text and its location data corresponding to the original document will be embedded within the TIFF file as previously described. The TIFF file will thus be opened by the redaction

software 13, whereby the electronic document may be redacted as required by a user.

According to yet another embodiment, the redaction application software may be
5 running in the background of the computer operating system, only becoming visible when the application is required.

According to a further embodiment, the redaction markings can be of any colour as selected by the user. This can be, for example, white, black, red, etc.

10

The redaction process of the present invention provides the user with a useful tool for use in the redaction of documents that are saved as electronic files on a computer.

15 This software is very useful in that documents created in any format, so long as the application is Windows based, can be printed to the dedicated print driver, and the output file redacted by the use of the redaction application.

Another useful feature of the redaction software is that users may pre-redact
20 documents upon conversion. In this way, a user may program into the system frequently used terms which are to be typically redacted from large numbers of documents. In this way, the redact software redacts these commonly used words

without the need of the user to redact these words from each document. This therefore, goes some way to ensuring that the redaction process is efficient.

An advantage of this redaction process is that the information as redacted by the user within the document is destroyed during the redaction process, and there is no possibility of recovering the redacted data from the final redacted electronic file. This results in an electronic file that can be publicly released, and the author can be confident that the electronic file contains no hidden information consisting of, for example, revision history.

10

The redaction process provides a tool for allowing a person to redact a document, and also keep an exact record of the redacted document. In this form, where text etc has been marked out, the redact marking will appear in translucent form, allowing the author to easily see the information that has been removed.

15

The redaction process can be used by a multitude of different users, and is application independent, so long as the application contains the facility to print to the standard Windows printing system, the generated print file can be redacted.

CLAIMS:-

1. A redaction process to enable a user to redact an electronic document on a computer, said process including converting a copy of the original electronic document file from its native format into the format of an electronic image file redacting sections of the electronic image file, and saving the redacted electronic image file in electronic file format.
5
2. The redaction process as claimed in claim 1, wherein the redaction process includes an application software component, a document conversion component, and the redaction software component.
10
3. The redaction process as claimed in claim 2, wherein the document conversion component includes a redact print driver, redact print monitor, and utilizes the computer operating systems print spooler.
15
4. The redaction process as claimed in claim 2, wherein the document conversion component is a software application that operating independently of the computer operating systems printing functionality.
20
5. The redaction process as claimed in claim 2, wherein the document conversion component includes the steps of scanning by electronic means an original document, saving said scanned document as an electronic image file, using optical character recognition software to recognise text contained in the image file, and a software application that embeds the document text and the text location data into the electronic image file.
25
6. The redaction process as claimed in any one of claims 2 to 5, wherein the document conversion component converts the original electronic application file to an electronic image file including, but not restricted to TIFF format.
30

7. The redaction process as claimed in claim 6 wherein text within the electronic image file is redacted with electronic redaction markings.
- 5 8. The redaction process as claimed in claim 7 wherein the redaction markings are translucent or solid shade.
9. The redaction process as claimed in claim 7 wherein the redaction software is capable of altering pixel values within the electronic image file corresponding to locations of the redaction markings from their original value to that of the value of the redaction markings.
- 10 10. The redaction process as claimed in claim in any one of claims 1 to 9 wherein the redacted electronic image file may be saved in electronic file format including but not limited to PDF format.
- 15 11. The redaction process as claimed in any one of claims 1 to 10 wherein the final redaction output file is an electronic image file including redaction markings that cannot be further edited by a user.
- 20 12. The redaction process as claimed in any one of claims 1 to 10 wherein the redaction review output file is an electronic image file including redaction markings that can be further edited by a user.
- 25 13. A computer programmed to enable a user to redact an electronic document including means to convert a copy of the original electronic document file from its native format into the format of an electronic image file, means by which to redact the electronic image file, and means to save the electronic image file in electronic file format.

14. The computer programmed to enable a user to redact an electronic document as claimed in claim 13, wherein the computer includes an application software component, a document conversion component, and the redaction software component.

5

15. The computer programmed to enable a user to redact an electronic document as claimed in claim 13, wherein the document conversion component includes a redact print driver, redact print monitor, and utilizes the computer operating systems print spooler.

10

16. The computer programmed to enable a user to redact an electronic document as claimed in claim 13, wherein the document conversion component is a software application that operating independently of the computer operating systems printing functionality.

15

17. The computer programmed to enable a user to redact an electronic document as claimed in claim 13, wherein the document conversion component includes the steps of scanning by electronic means an original document, saving said scanned document as an electronic image file, using optical character recognition software to recognise text contained in the image file, and a software application that embeds the document text and the text location data into the electronic image file.

20

18. The computer programmed to enable a user to redact an electronic document as claimed in any one of claims 14 to 17, wherein the document conversion component converts the original electronic application file to an electronic image file including, but not restricted to TIFF format.

25

19. The computer programmed to enable a user to redact an electronic document as claimed in claim 18, wherein text within the electronic image file is redacted with electronic redaction markings.
- 5 20. The computer programmed to enable a user to redact an electronic document as claimed in claim 18 wherein the redaction markings are translucent or solid shade.
- 10 21. The computer programmed to enable a user to redact an electronic document as claimed in claim 18 wherein the redaction software is capable of altering pixel values within the electronic image file corresponding to locations of the redaction markings from their original value to that of the value of the redaction markings.
- 15 22. The computer programmed to enable a user to redact an electronic document as claimed in claim in any one of claims 14 to 21, wherein the redacted electronic image file may be saved in electronic file format including but not limited to PDF format.
- 20 23. The computer programmed to enable a user to redact an electronic document as claimed in any one of claims 13 to 22, to wherein the final redaction output file is an electronic image file including redaction markings that cannot be further edited by a user.
- 25 24. The computer programmed to enable a user to redact an electronic document as claimed in any one of claims 13 to 22, wherein the redaction review output file is an electronic image file including redaction markings that can be further edited by a user.

25. A redaction process substantially as herein described within reference to Figures 1-16 of the accompanying drawings.

26. A computer programmed to enable a user to redact an electronic document
5 as substantially as herein described within reference to Figures 1-16 of the accompanying drawings.

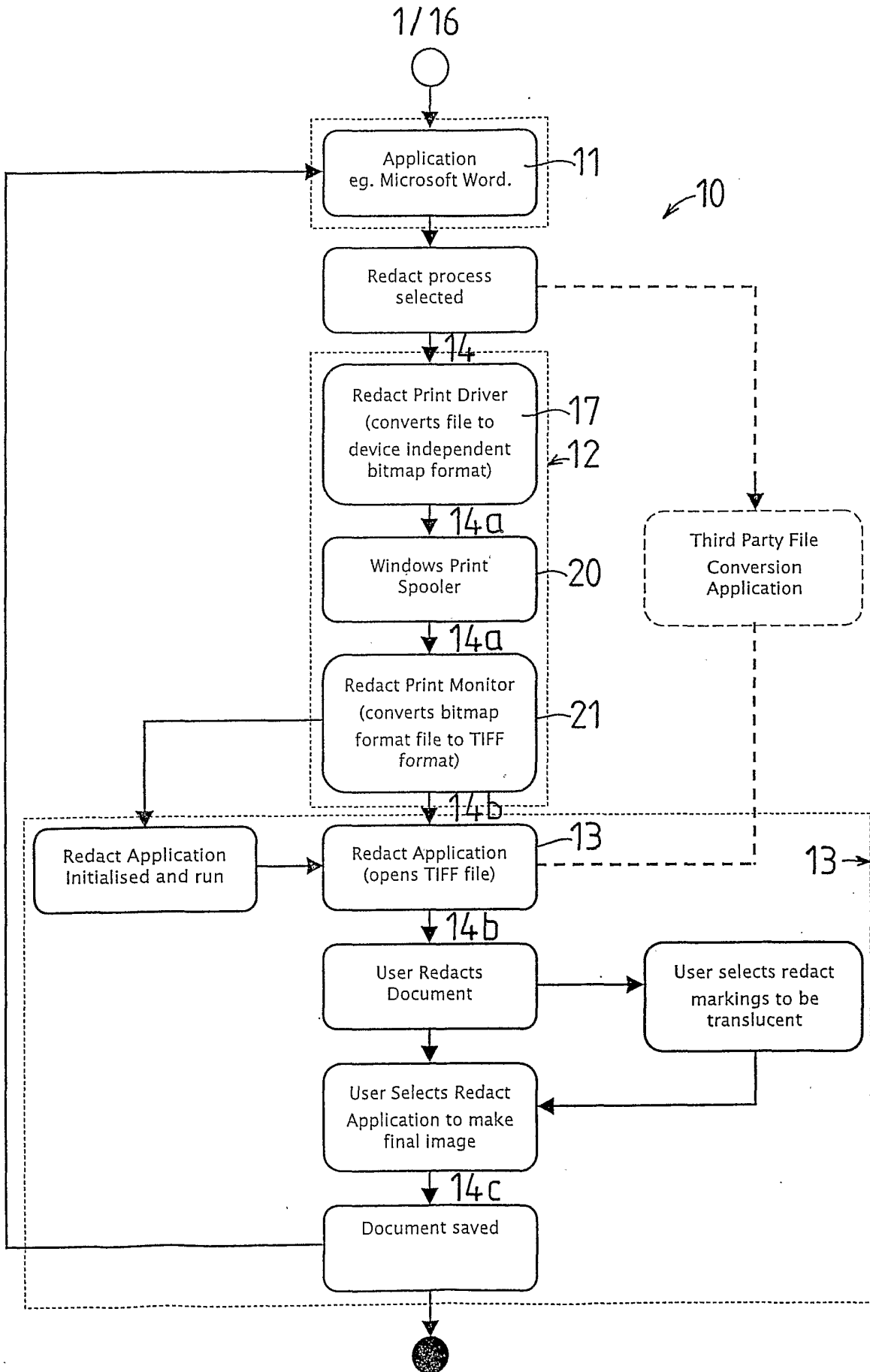


FIG. 1

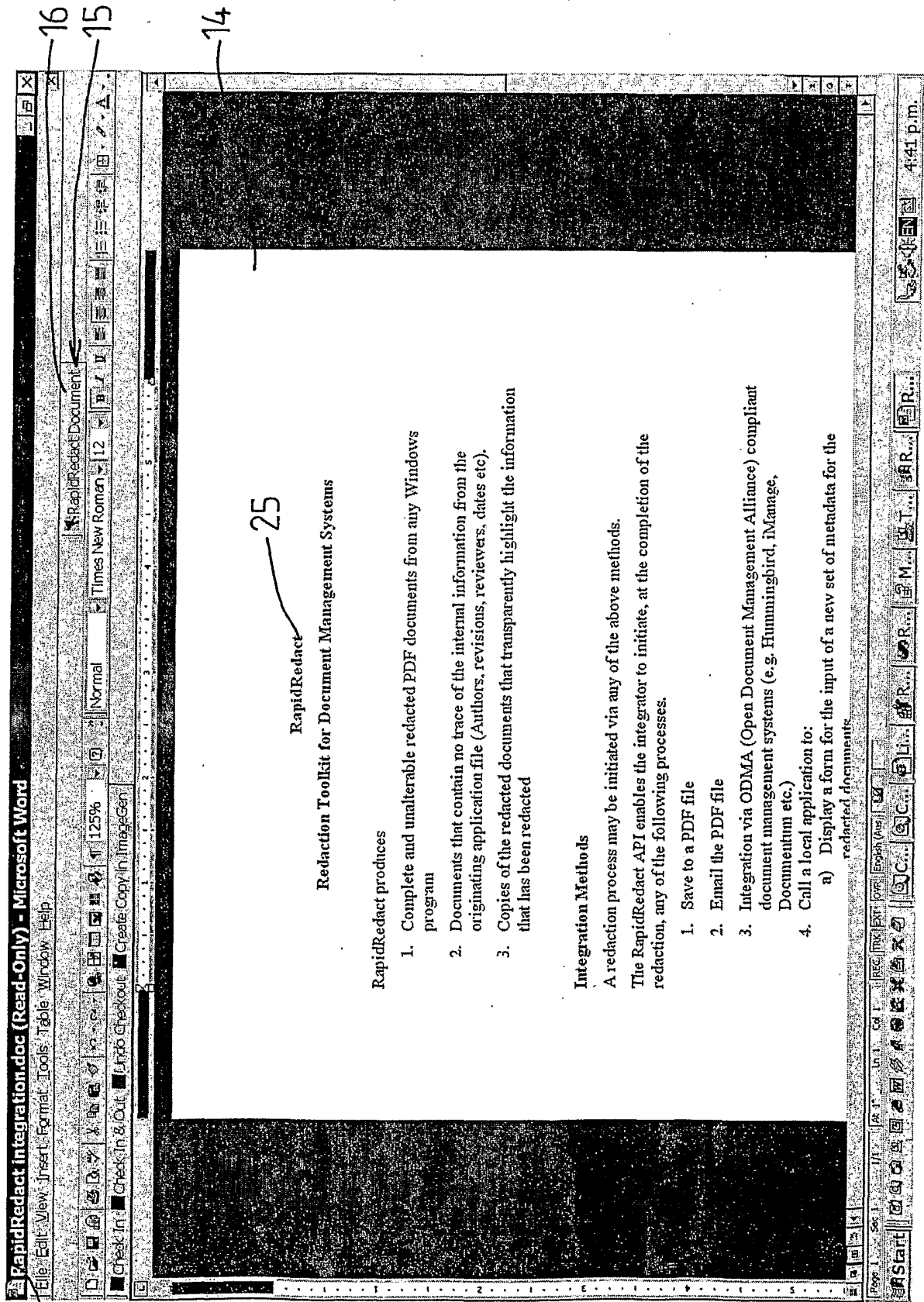
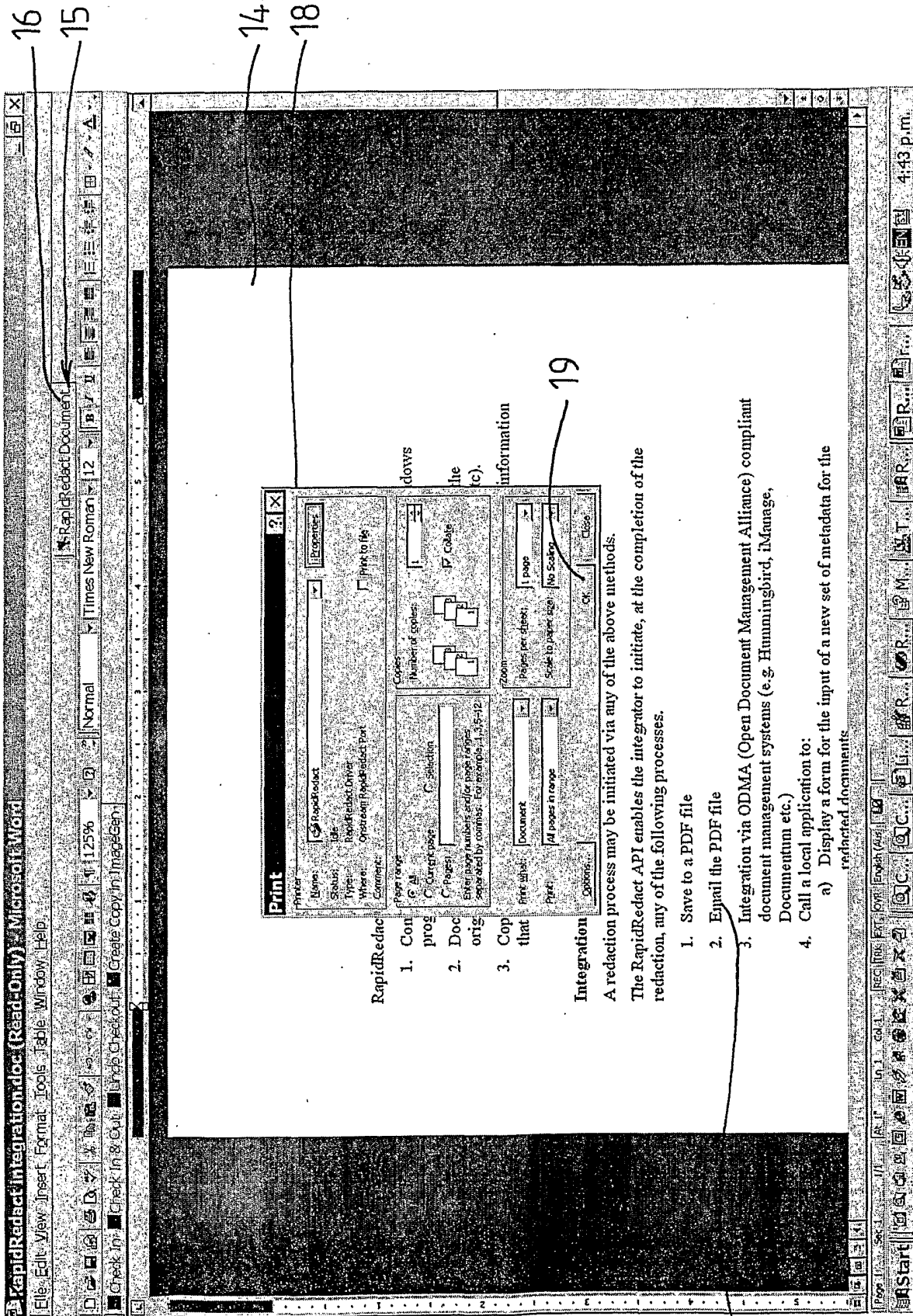


FIG. 2

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RapidRedact

1. Content
2. Document origin
3. Copy that

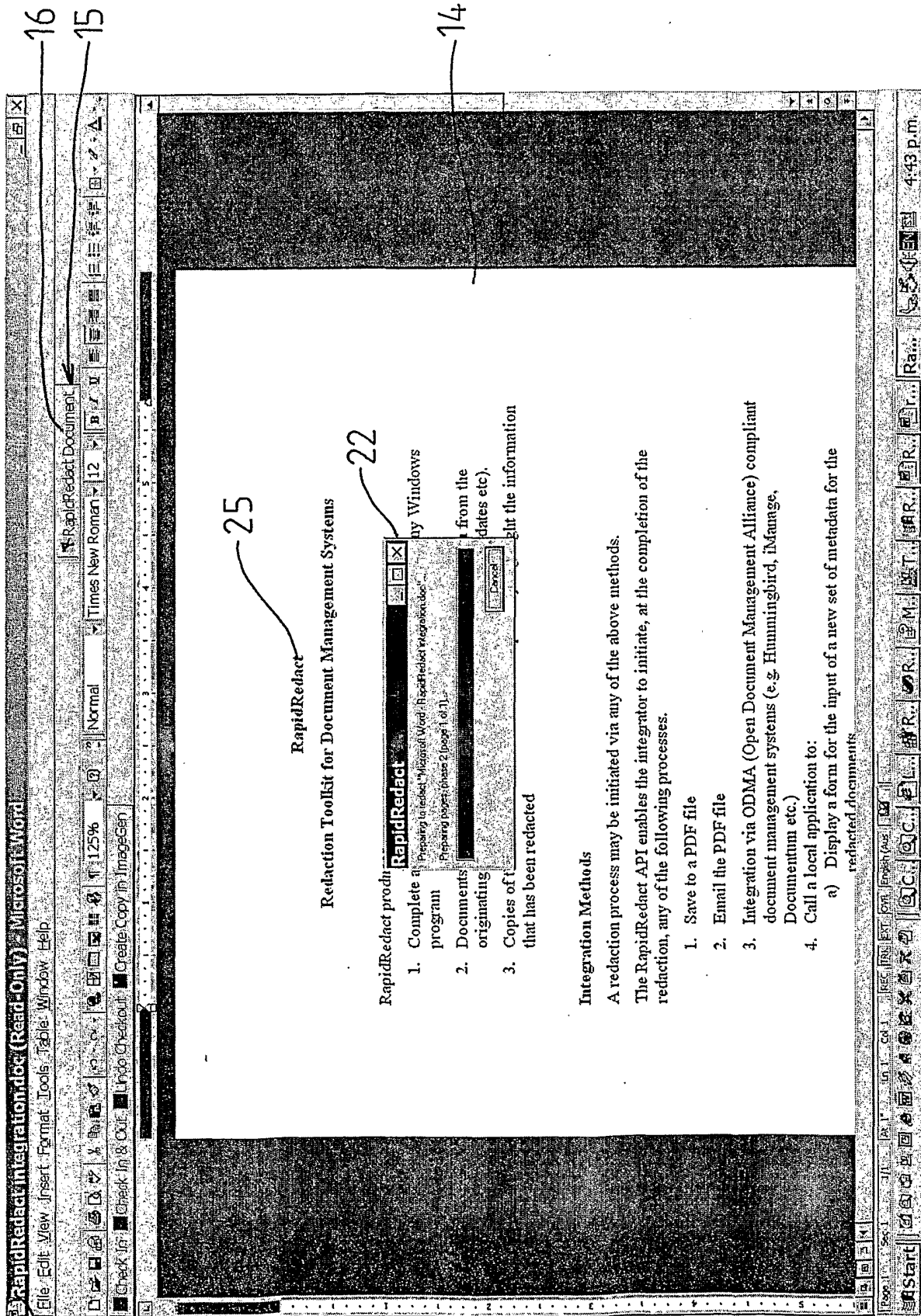
Integration

A redaction process may be initiated via any of the above methods.

The RapidRedact API enables the integrator to initiate, at the completion of the redaction, any of the following processes.

1. Save to a PDF file
2. Email the PDF file
3. Integration via ODMA (Open Document Management Alliance) compliant document management systems (e.g. Hummingbird, iManage, Documentum etc.)
4. Call a local application to:
 - a) Display a form for the input of a new set of metadata for the redacted documents

FIG. 3



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FIG. 4

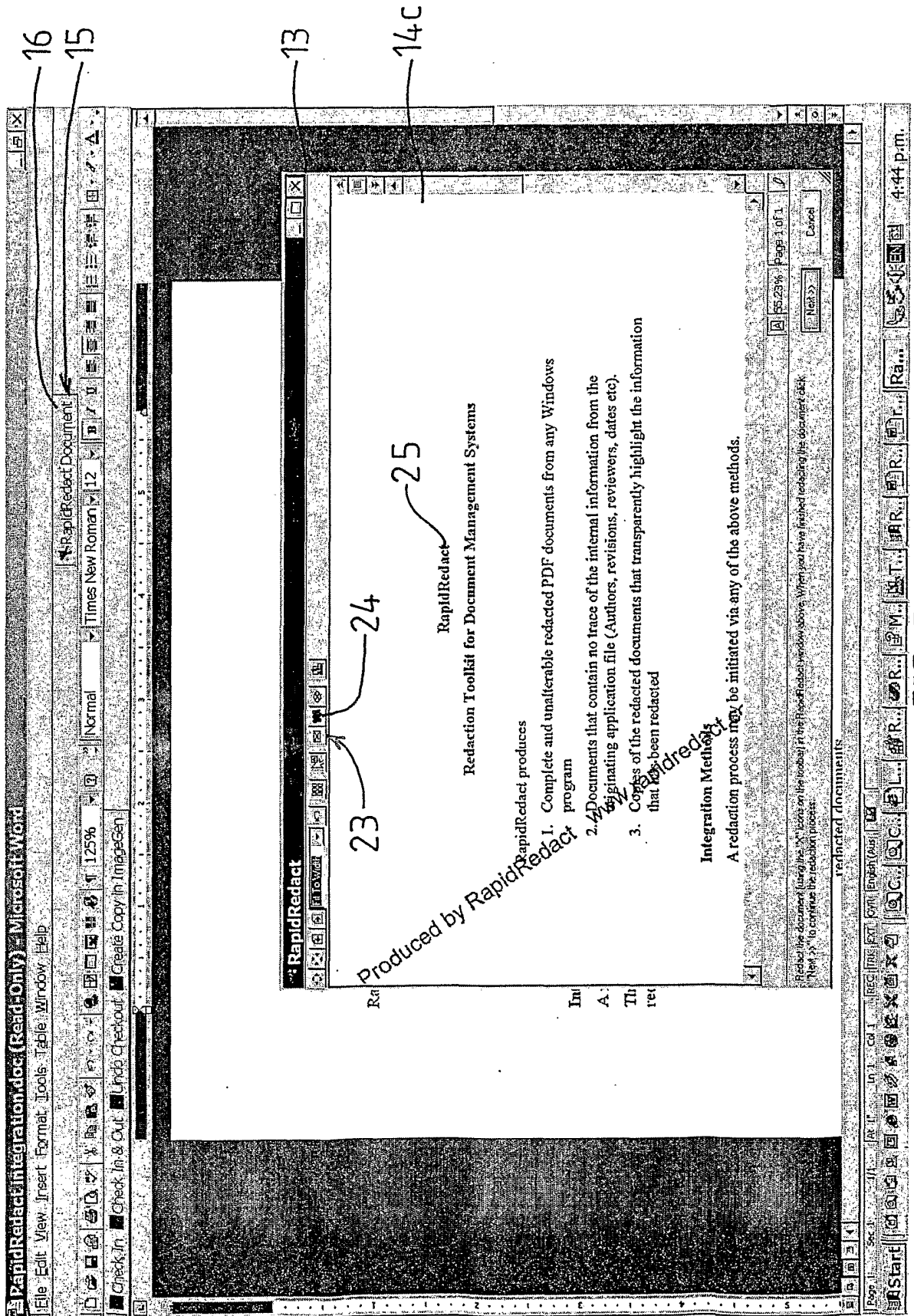


FIG. 5

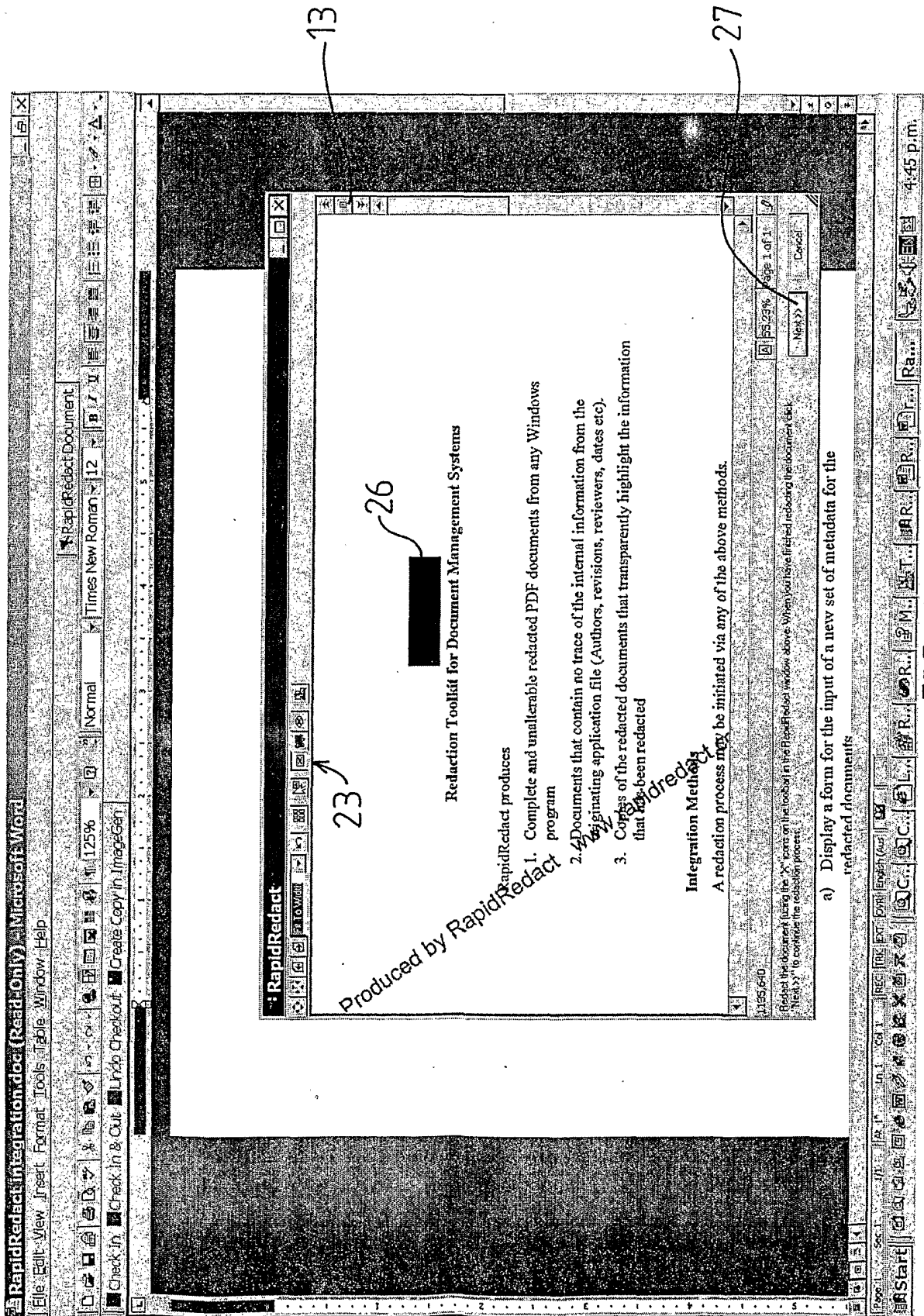
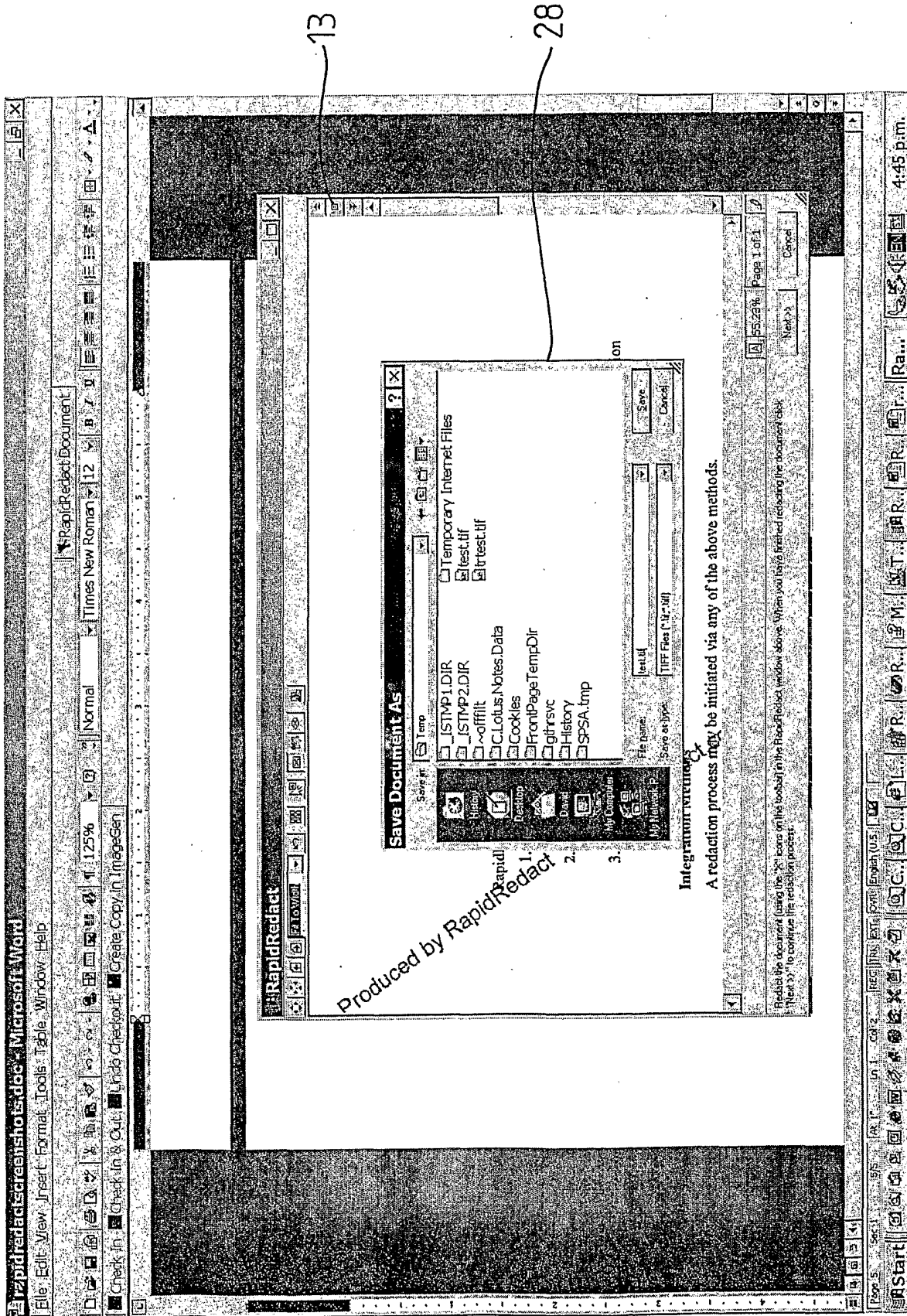


FIG. 6

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FIG. 7

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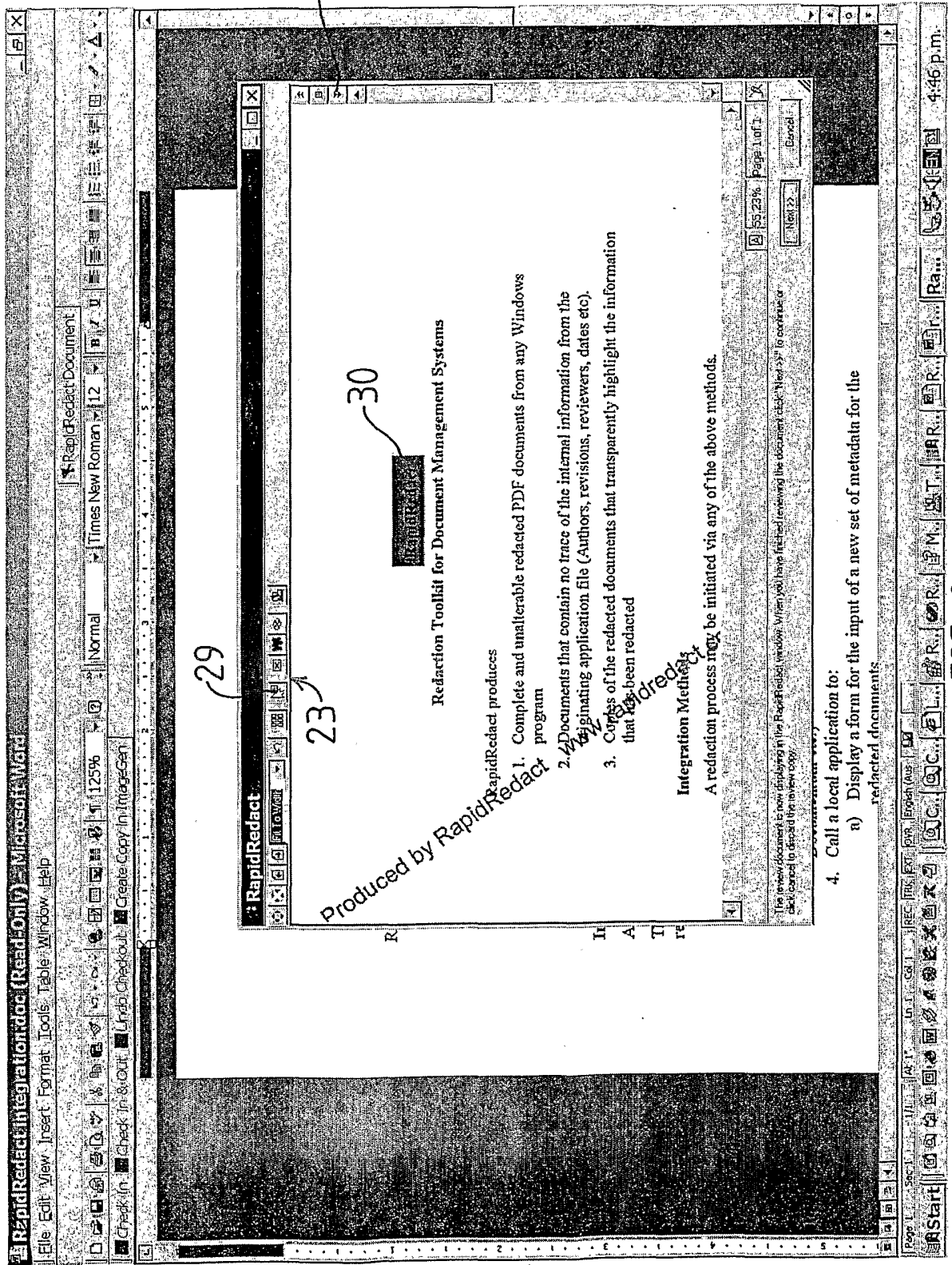


FIG. 8

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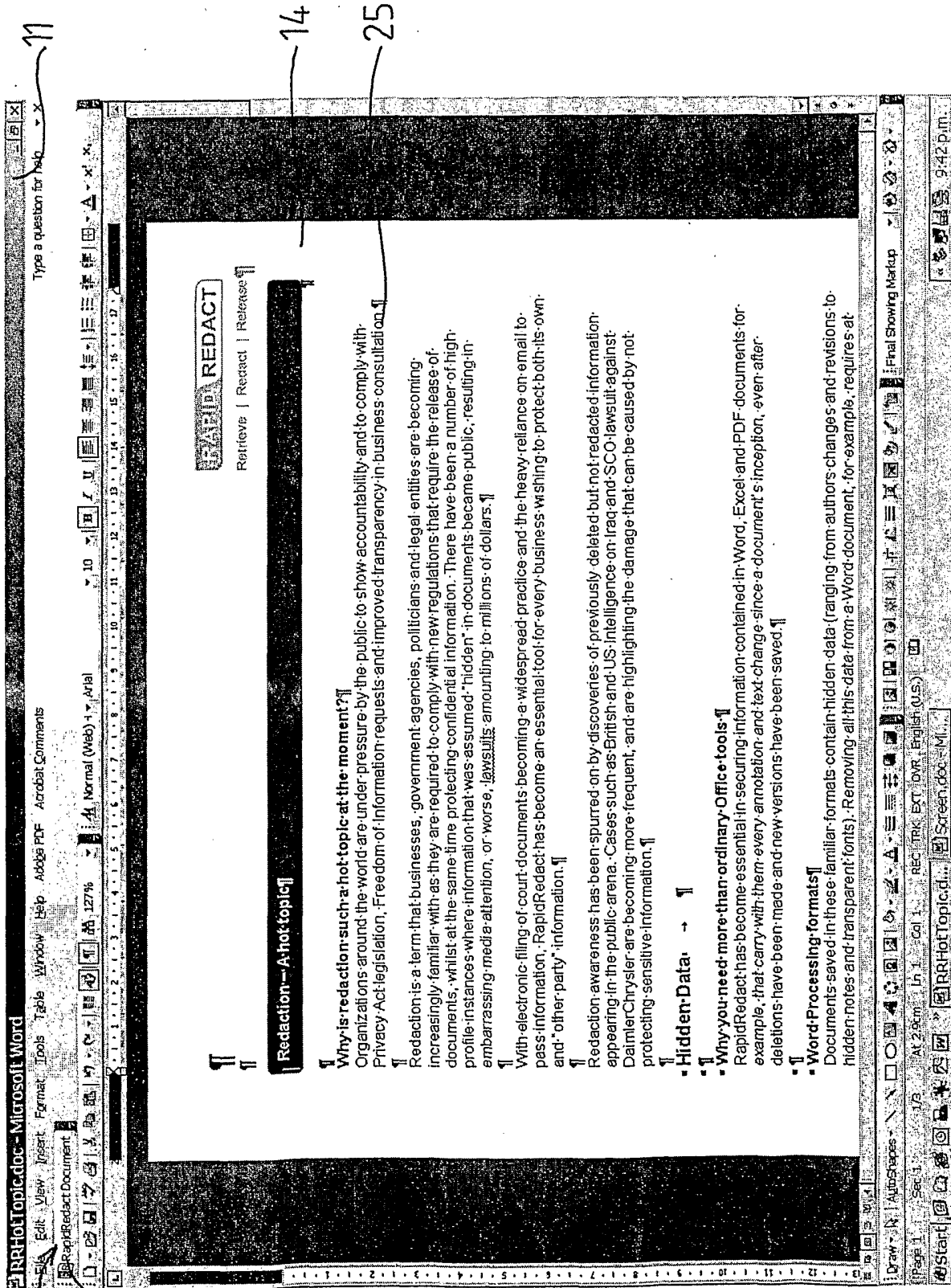
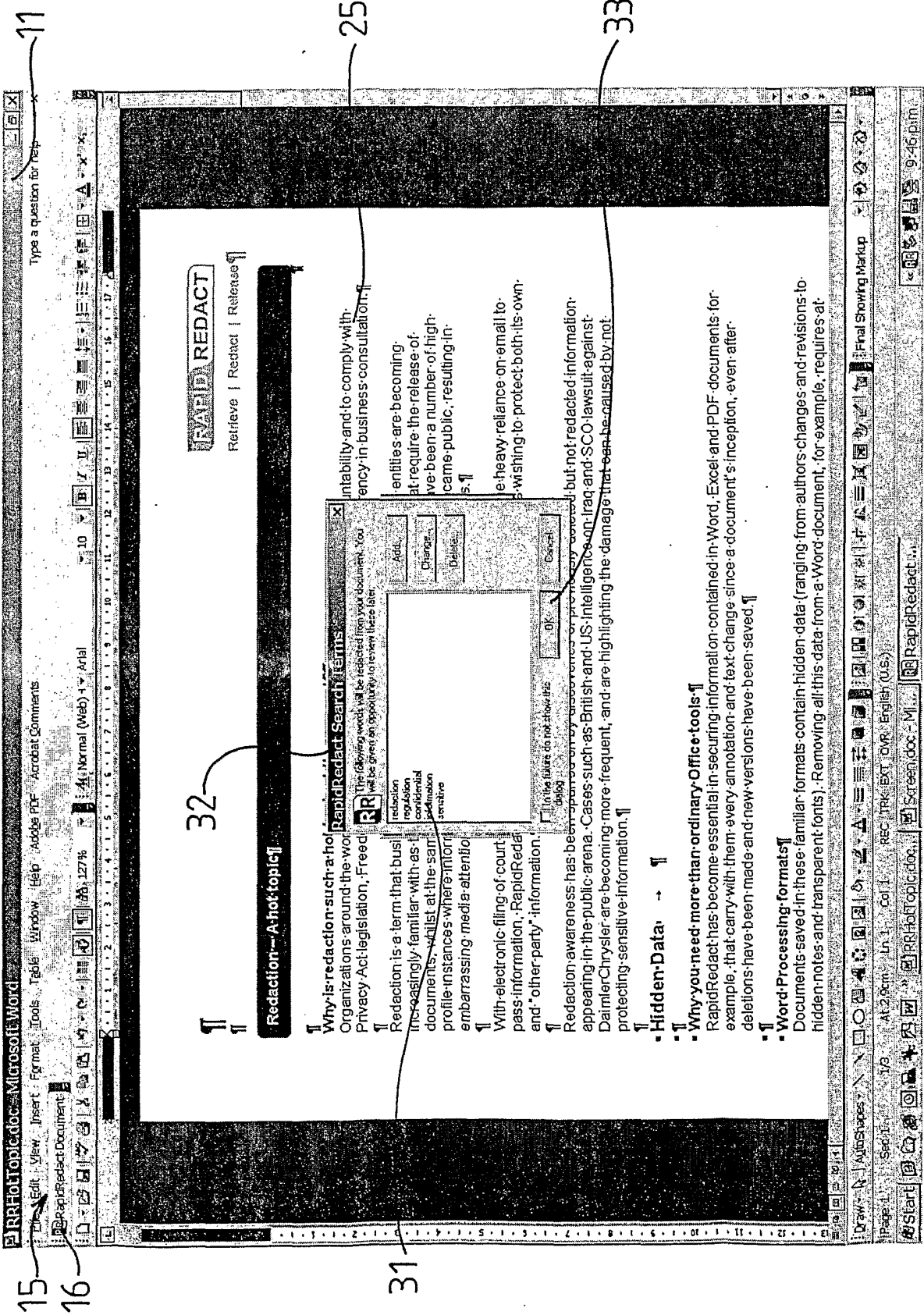


FIG. 9

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Redaction - A hot topic

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FIG. 10

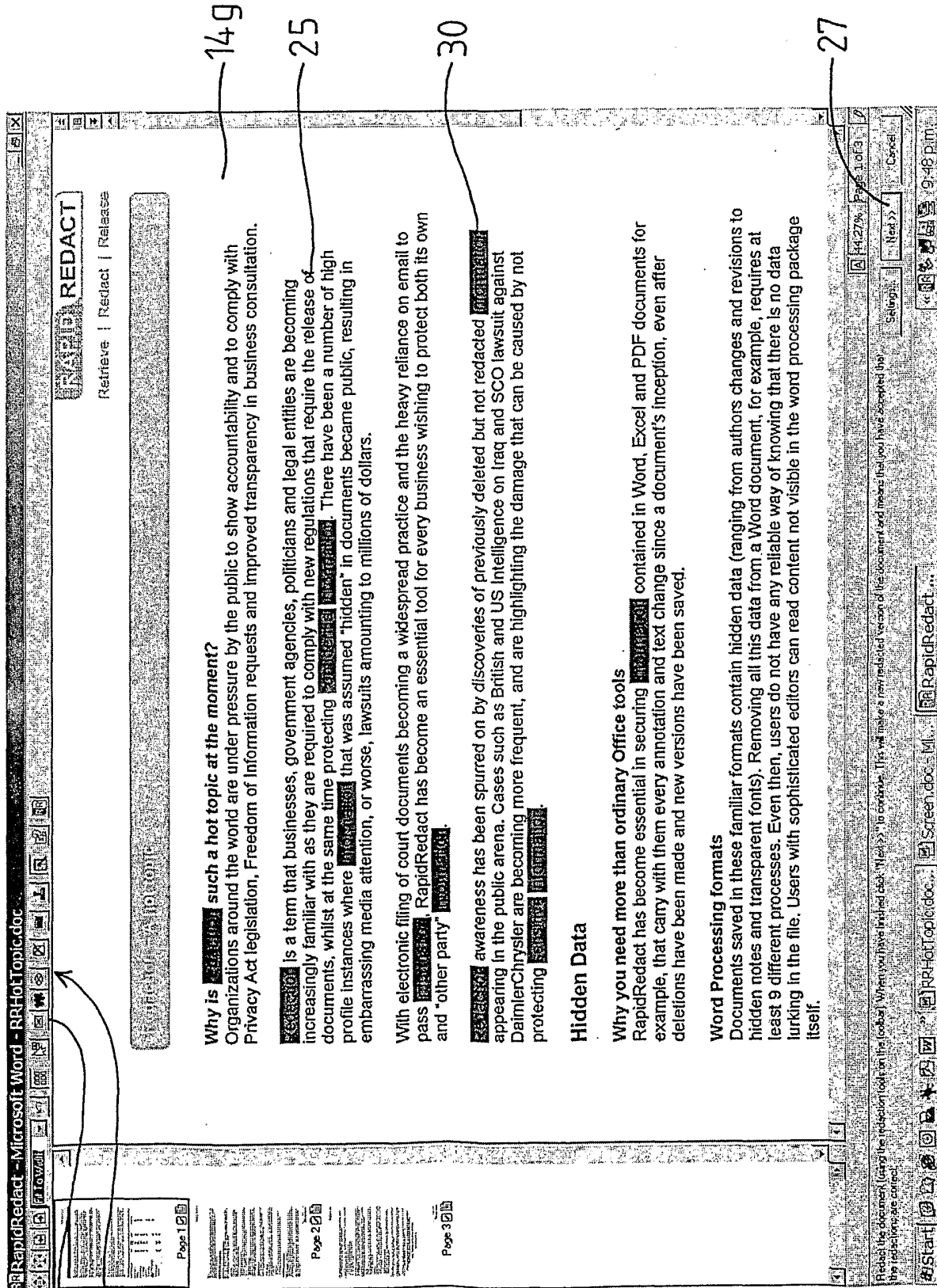
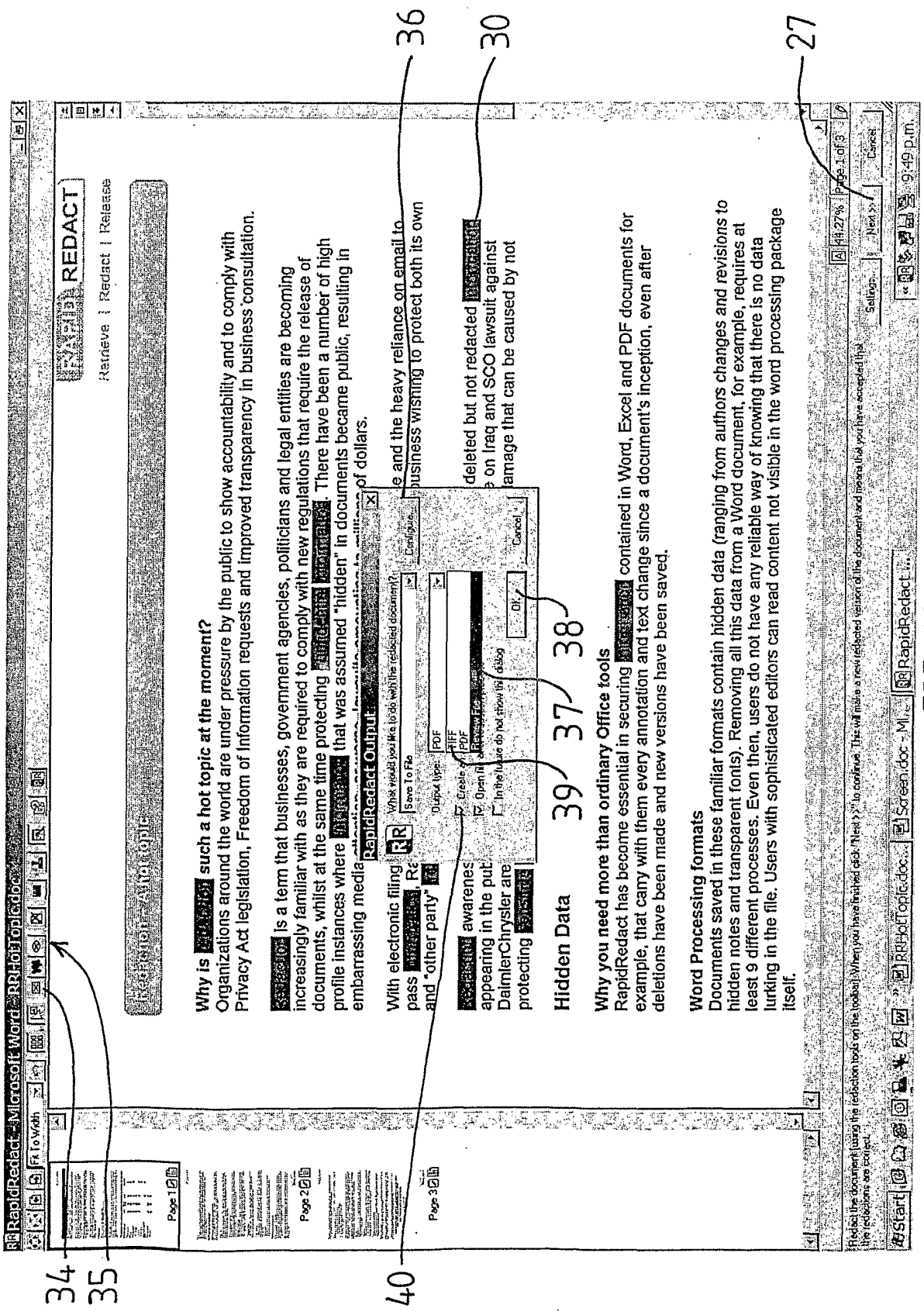


FIG. 11



Why is [REDACTED] such a hot topic at the moment?

Organizations around the world are under pressure by the public to show accountability and to comply with Privacy Act legislation, Freedom of Information requests and improved transparency in business consultation.

[REDACTED] is a term that businesses, government agencies, politicians and legal entities are becoming increasingly familiar with as they are required to comply with new regulations that require the release of documents, whilst at the same time protecting [REDACTED]. There have been a number of high profile instances where [REDACTED] that was assumed "hidden" in documents became public, resulting in embarrassing media [REDACTED] of dollars.

With electronic filing [REDACTED] and the heavy reliance on email to pass [REDACTED] business wishing to protect both its own and "other party" [REDACTED]

[REDACTED] awareness appearing in the public domain. DaimlerChrysler are protecting [REDACTED]

Hidden Data

Why you need more than ordinary Office tools

RapidRedact has become essential in securing [REDACTED] contained in Word, Excel and PDF documents for example, that carry with them every annotation and text change since a document's inception, even after deletions have been made and new versions have been saved.

Word Processing formats

Documents saved in these familiar formats contain hidden data (ranging from authors changes and revisions to hidden notes and transparent fonts). Removing all this data from a Word document, for example, requires at least 9 different processes. Even then, users do not have any reliable way of knowing that there is no data lurking in the file. Users with sophisticated editors can read content not visible in the word processing package itself.

FIG. 12

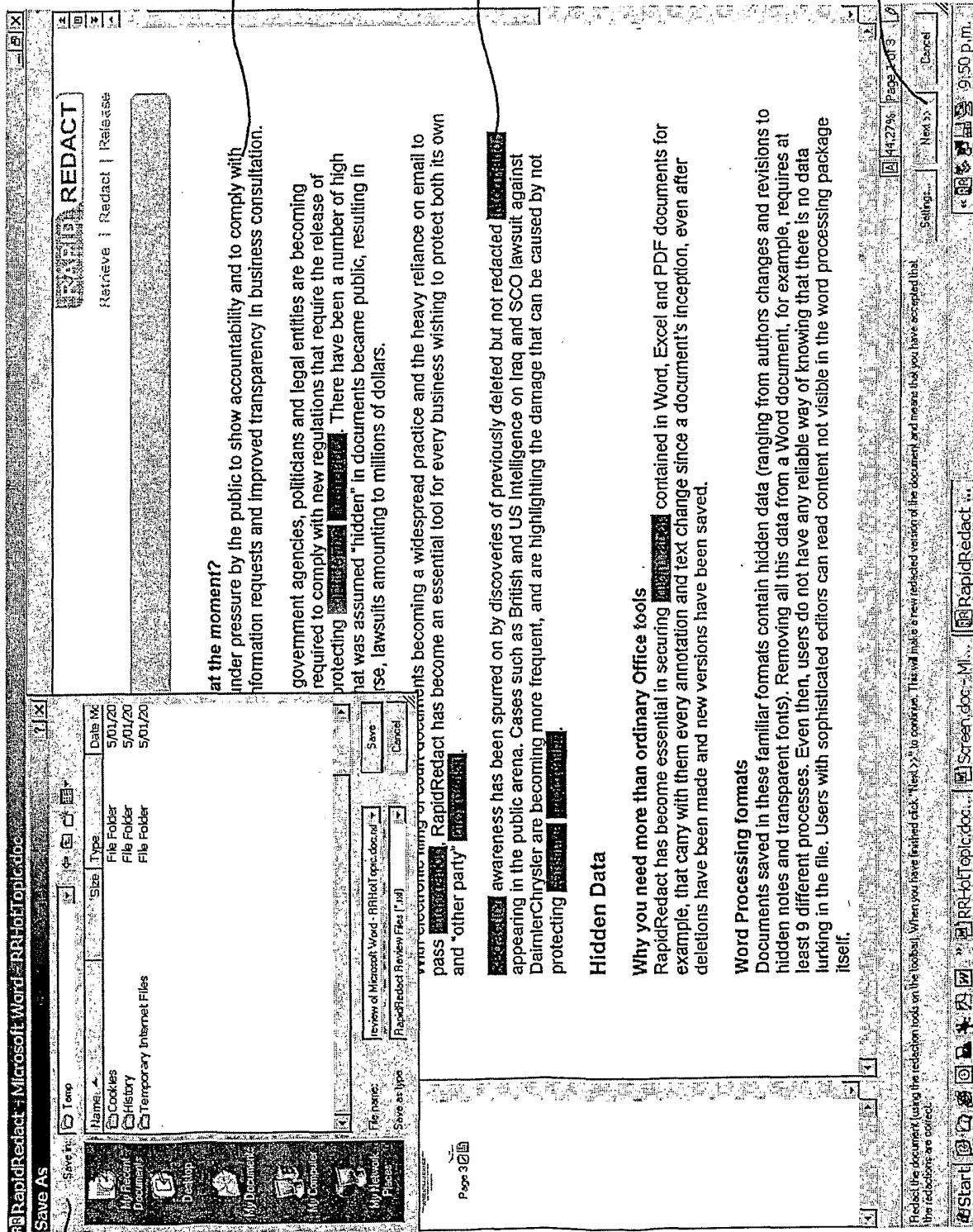


FIG. 13

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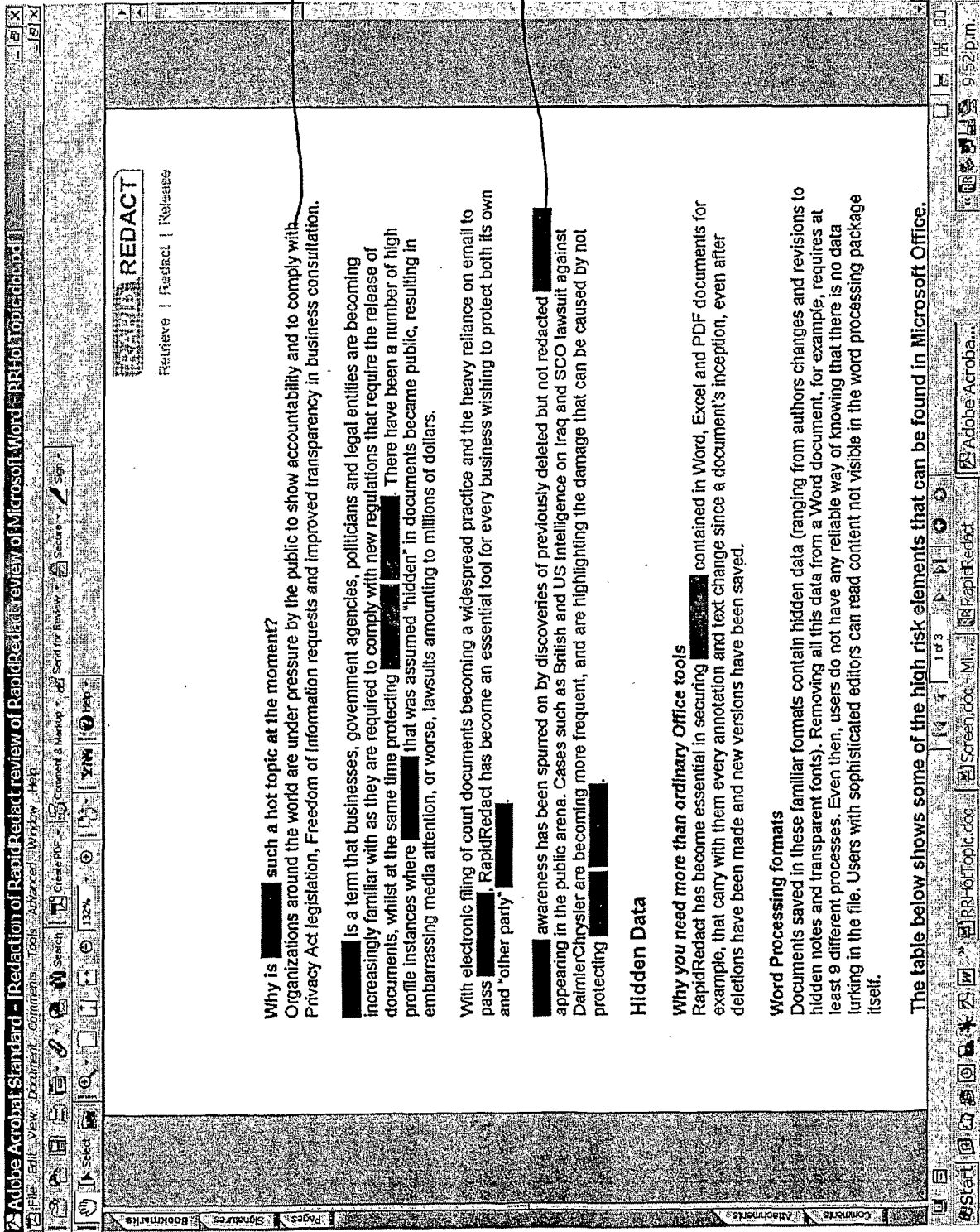
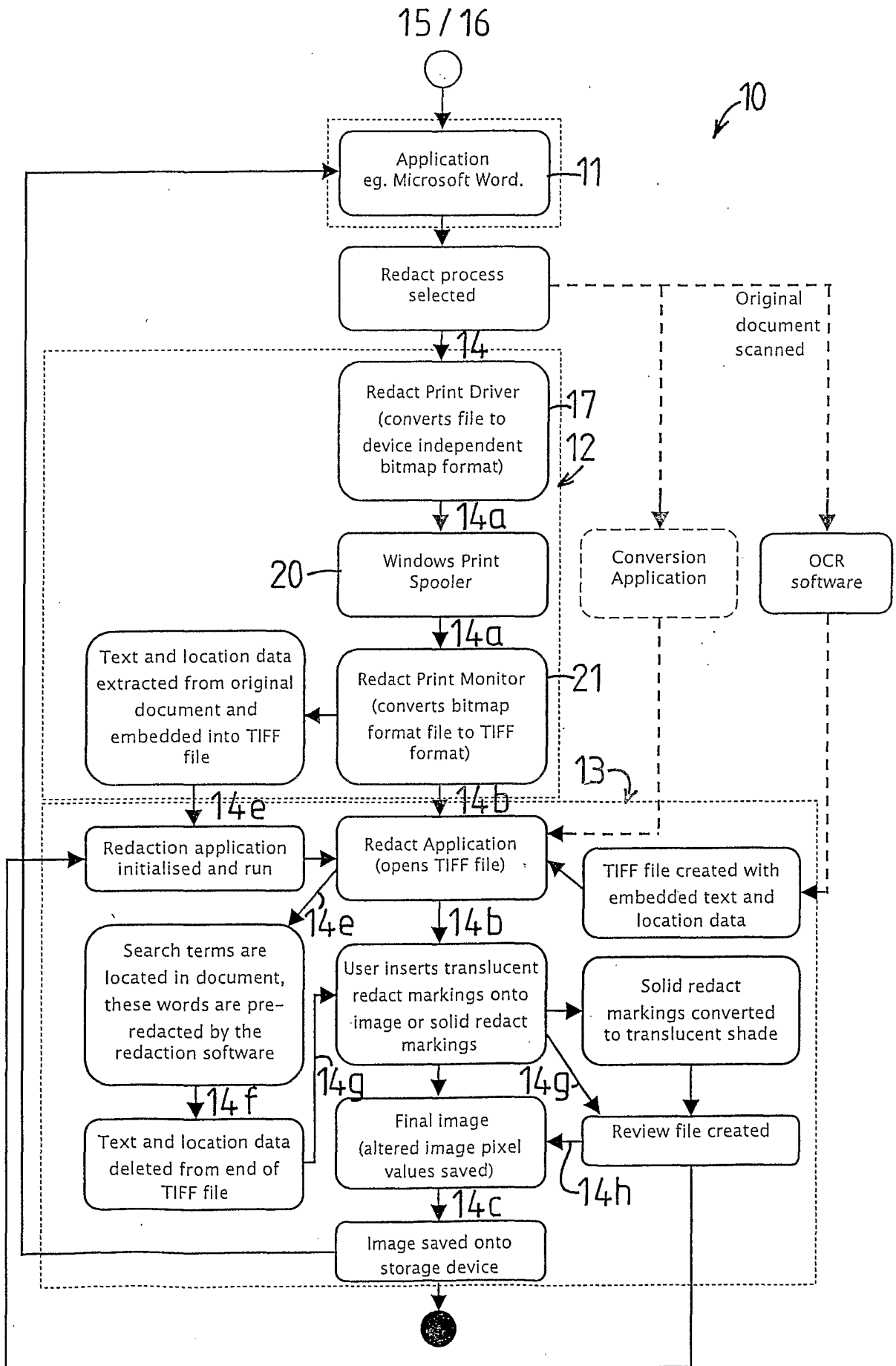


FIG. 14



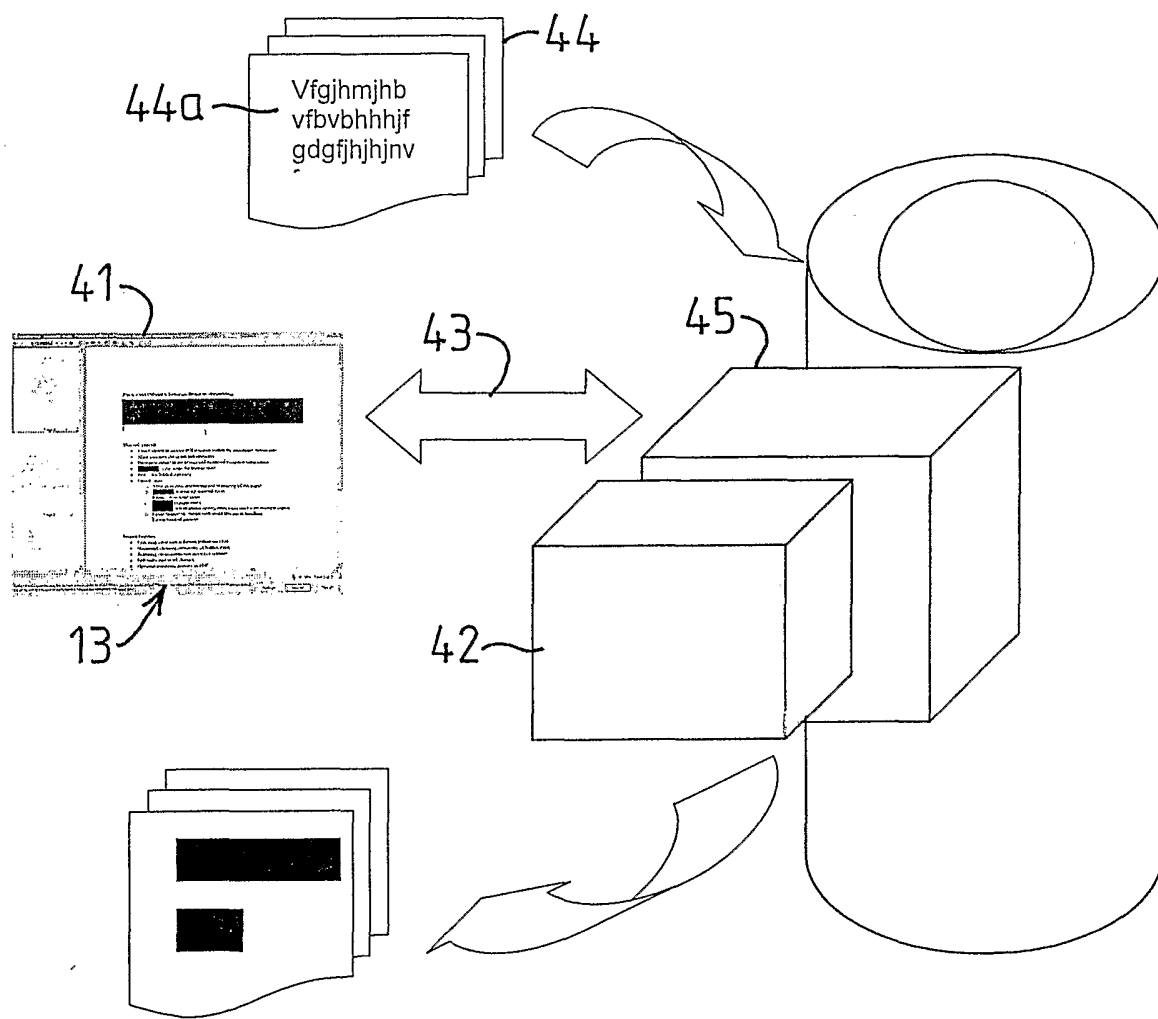


FIG. 16

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NZ2005/000264

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.

G06F 17/24 (2006.01)

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
DWPI, USPTO, PCT (redact, sanitise, deidentify, anonymise, edit, confidential, sensitive, image, bitmap, etc. etc.)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<i>Redax[®] User Guide, Version 3.5</i> http://docs.appligent.com/userguide/RedaxUserGuide.pdf	1-26
A	US 2003/0145017 A1(PATTON et al), 31 July 2003 the whole document	1-26
A	US 2002/0083079 A1 (MEIER et al), 27 June 2002 paragraph 103	1-26
A	US 5,903,646 A (RACKMAN), 11 May 1999 the whole document	1-26

 Further documents are listed in the continuation of Box C See patent family annex

* Special categories of cited documents:		
"A" document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search
6 December 2005

Date of mailing of the international search report 21 DEC 2005

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/NZ2005/000264

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,581,682 A (ANDERSON et al), 3 December 1996 the whole document	1-26

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/NZ2005/000264

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
US	2003145017	NONE			
US	2002083079	AU	30484/02	WO	0241170
US	5903646	NONE			
US	5581682	CA	2045907	JP	5189431
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.					
END OF ANNEX					