US008661342B2

(12) **United States Patent**
Lu et al.

(10) **Patent No.: US 8,661,342 B2**
(45) **Date of Patent: Feb. 25, 2014**

(54) **MAIL MERGE INTEGRATION TECHNIQUES**

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(73) Assignee: **Microsoft Corporation**, Redmond, WA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 992 days.

(21) Appl. No.: **12/140,292**

(22) Filed: **Jun. 17, 2008**

(65) **Prior Publication Data**

US 2009/0313209 A1 Dec. 17, 2009

(51) **Int. Cl.**
G06F 17/00 (2006.01)
G06F 21/00 (2013.01)

(52) **U.S. Cl.**
USPC **715/271**; 715/234; 715/235; 715/236; 709/206

(58) **Field of Classification Search**
USPC 715/234, 271, 235, 236; 709/206
See application file for complete search history.

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Primary Examiner — William Bashore
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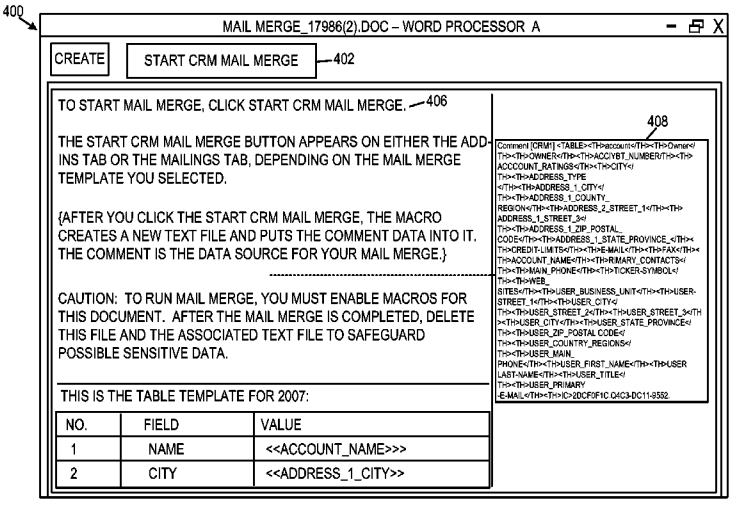
(74) *Attorney, Agent, or Firm* — Damon Rieth; Brian Haslam; Micky Minhas

(57) **ABSTRACT**

Various technologies and techniques are disclosed for integrating a customer relationship management application with a mail merge operation on a client-side word processor. Mail merge settings are received from a user, including a record set to use in a mail merge operation. A new mail merge document is created. The record set is added to the mail merge document. A link is added to a template that will control the mail merge operation on a client-side word processor. The linked template gets attached to the new mail merge document when opened on the client-side word processor. Techniques for beginning a mail merge operation on a client-side word processor are described. A downloaded mail merge document is validated. The record set contained in the downloaded mail merge document is separated into one or more separate files. A mail merge wizard is started and advanced to a proper stage.

19 Claims, 18 Drawing Sheets



FOLEON EX1022
IPR2026-00404

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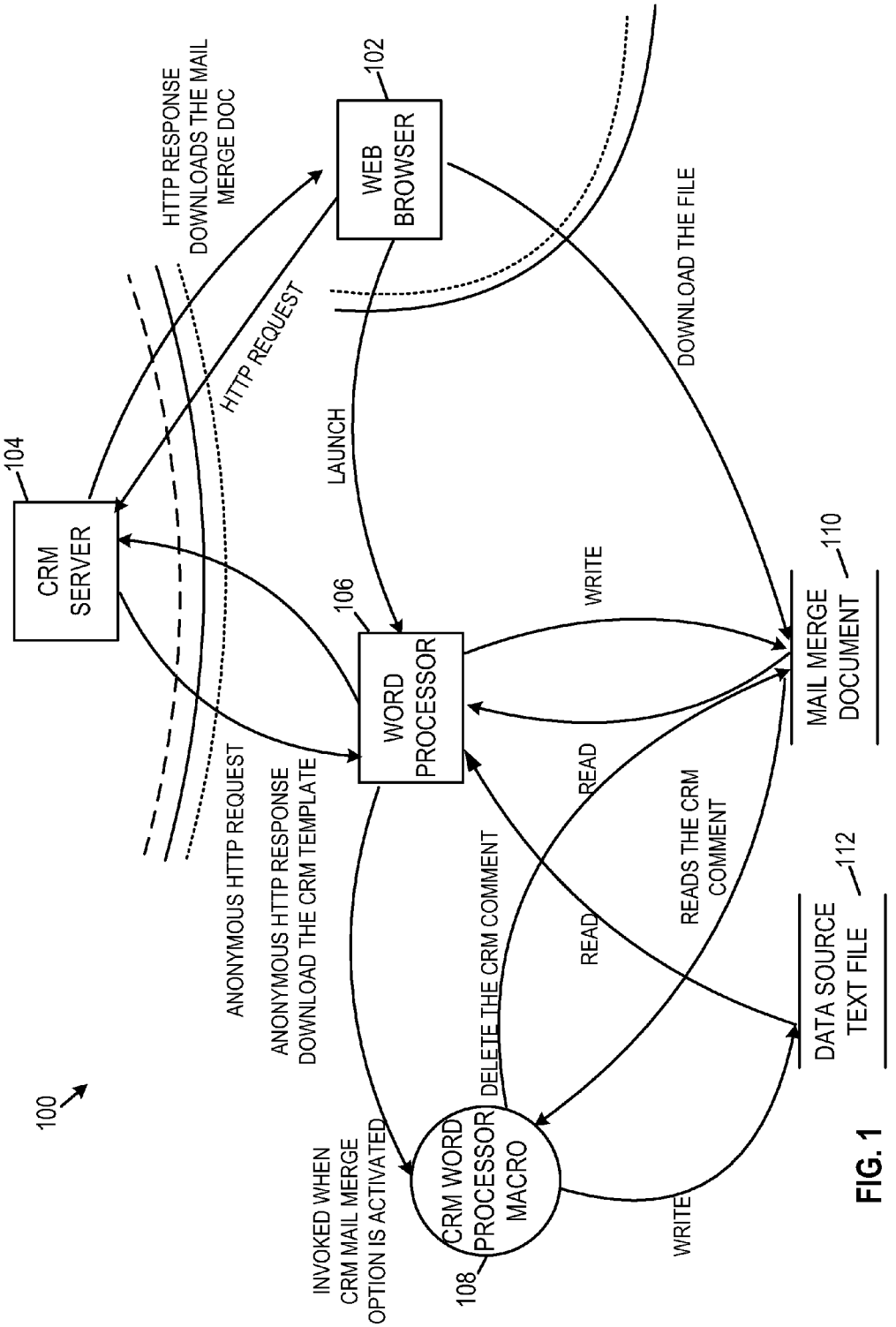
100
CRM SERVER
104
HTTP RESPONSE DOWNLOADS THE MAIL MERGE DOC
WEB BROWSER
102
HTTP REQUEST
LAUNCH
DOWNLOAD THE FILE
WORD PROCESSOR
106
WRITE
MAIL MERGE DOCUMENT
110
ANONYMOUS HTTP REQUEST
ANONYMOUS HTTP RESPONSE DOWNLOAD THE CRM TEMPLATE
READ
READS THE CRM COMMENT
DELETE THE CRM COMMENT
READ
DATA SOURCE TEXT FILE
112
INVOKED WHEN CRM MAIL MERGE OPTION IS ACTIVATED
CRM WORD PROCESSOR MACRO
108
WRITE

FIG. 1

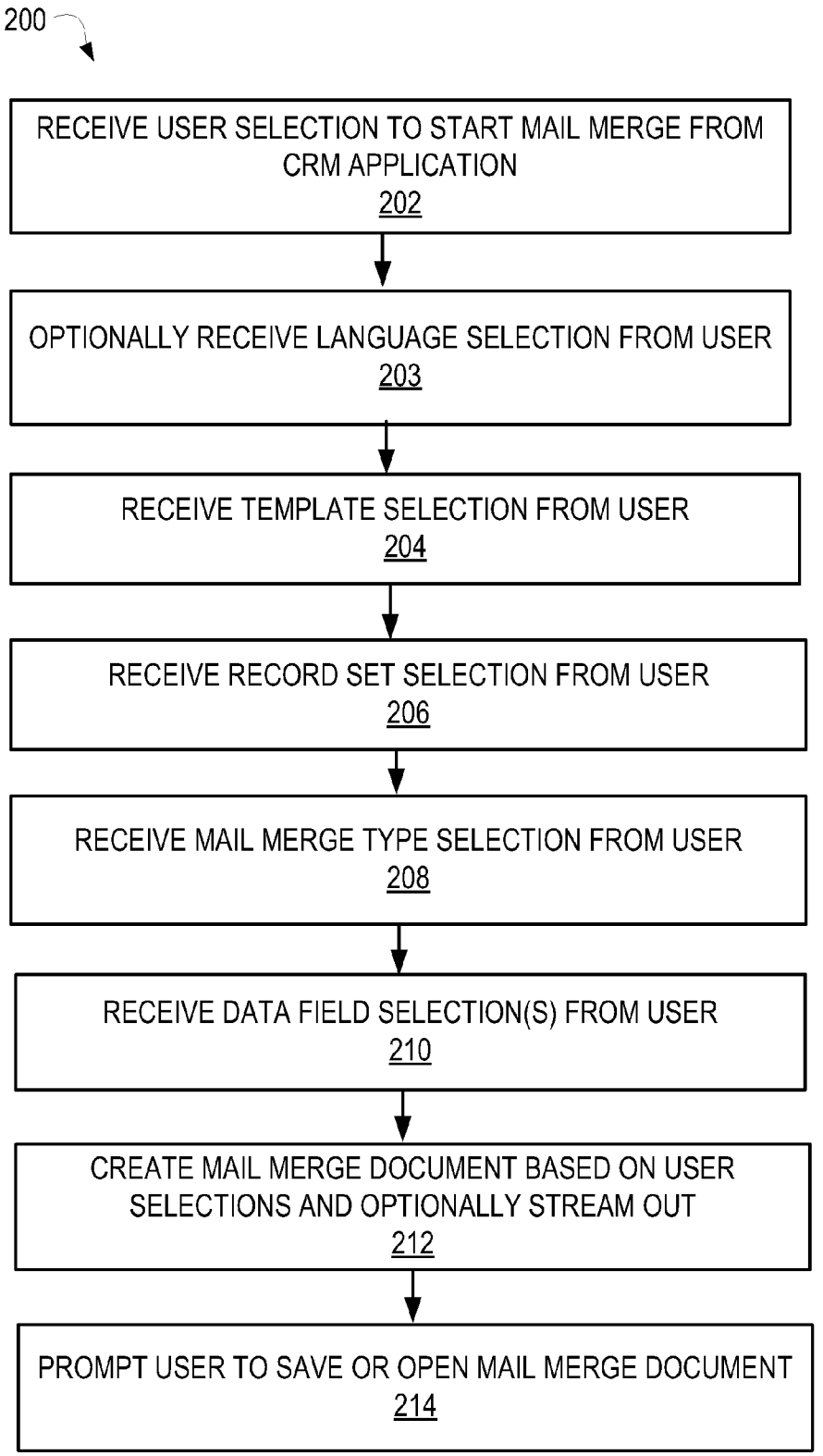
200
RECEIVE USER SELECTION TO START MAIL MERGE FROM CRM APPLICATION
202
OPTIONALLY RECEIVE LANGUAGE SELECTION FROM USER
203
RECEIVE TEMPLATE SELECTION FROM USER
204
RECEIVE RECORD SET SELECTION FROM USER
206
RECEIVE MAIL MERGE TYPE SELECTION FROM USER
208
RECEIVE DATA FIELD SELECTION(S) FROM USER
210
CREATE MAIL MERGE DOCUMENT BASED ON USER SELECTIONS AND OPTIONALLY STREAM OUT
212
PROMPT USER TO SAVE OR OPEN MAIL MERGE DOCUMENT
214

FIG. 2

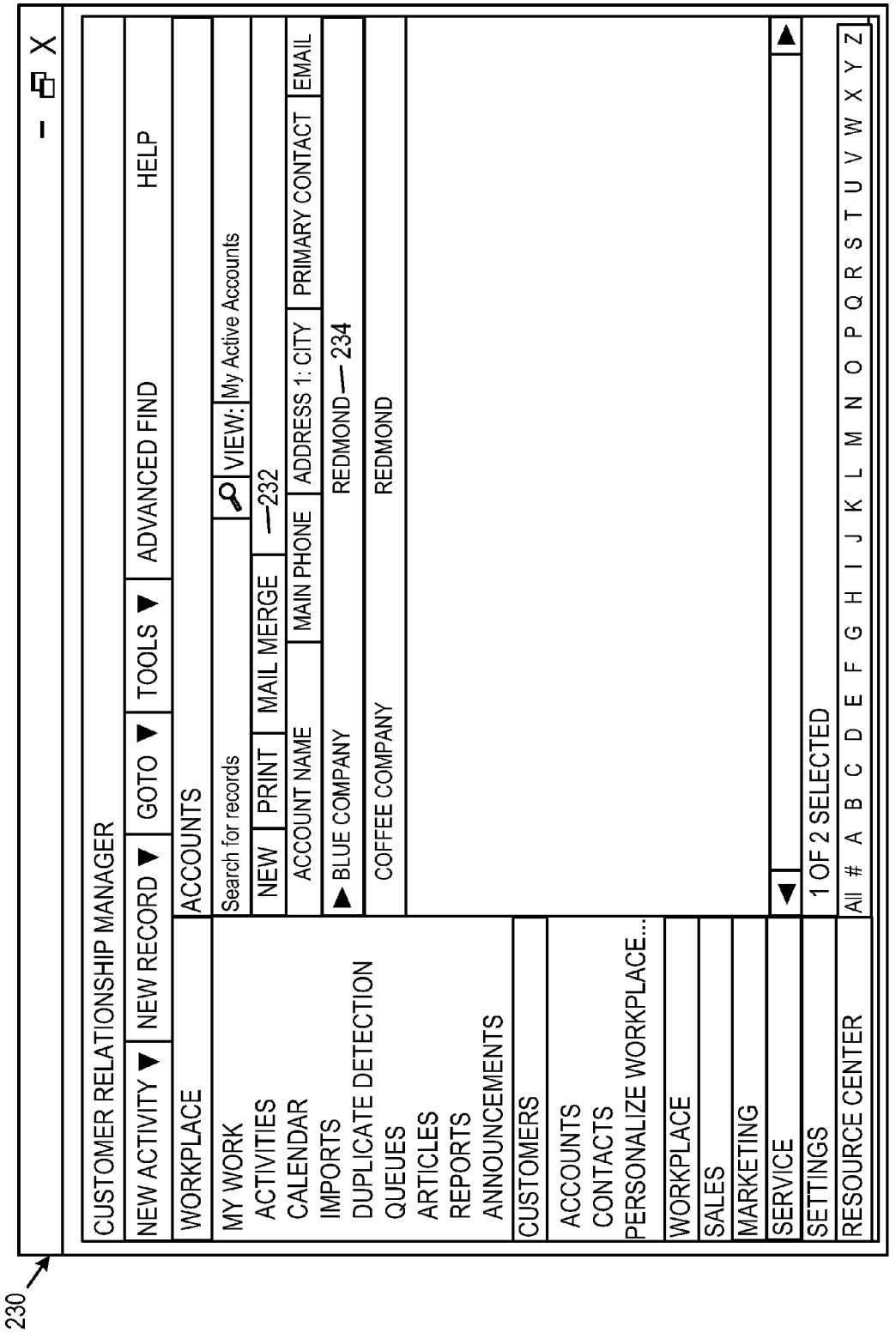
230
CUSTOMER RELATIONSHIP MANAGER
NEW ACTIVITY
NEW RECORD
GOTO
TOOLS
ADVANCED FIND
HELP
WORKPLACE
ACCOUNTS
MY WORK
ACTIVITIES
CALENDAR
IMPORTS
DUPLICATE DETECTION
QUEUES
ARTICLES
REPORTS
ANNOUNCEMENTS
CUSTOMERS
ACCOUNTS
CONTACTS
PERSONALIZE WORKPLACE...
WORKPLACE
SALES
MARKETING
SERVICE
SETTINGS
RESOURCE CENTER
Search for records
VIEW:
My Active Accounts
NEW
PRINT
MAIL MERGE
232
ACCOUNT NAME
MAIN PHONE
ADDRESS 1: CITY
PRIMARY CONTACT
EMAIL
BLUE COMPANY
REDMOND
234
COFFEE COMPANY
REDMOND
1 OF 2 SELECTED
All # A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

FIG. 3

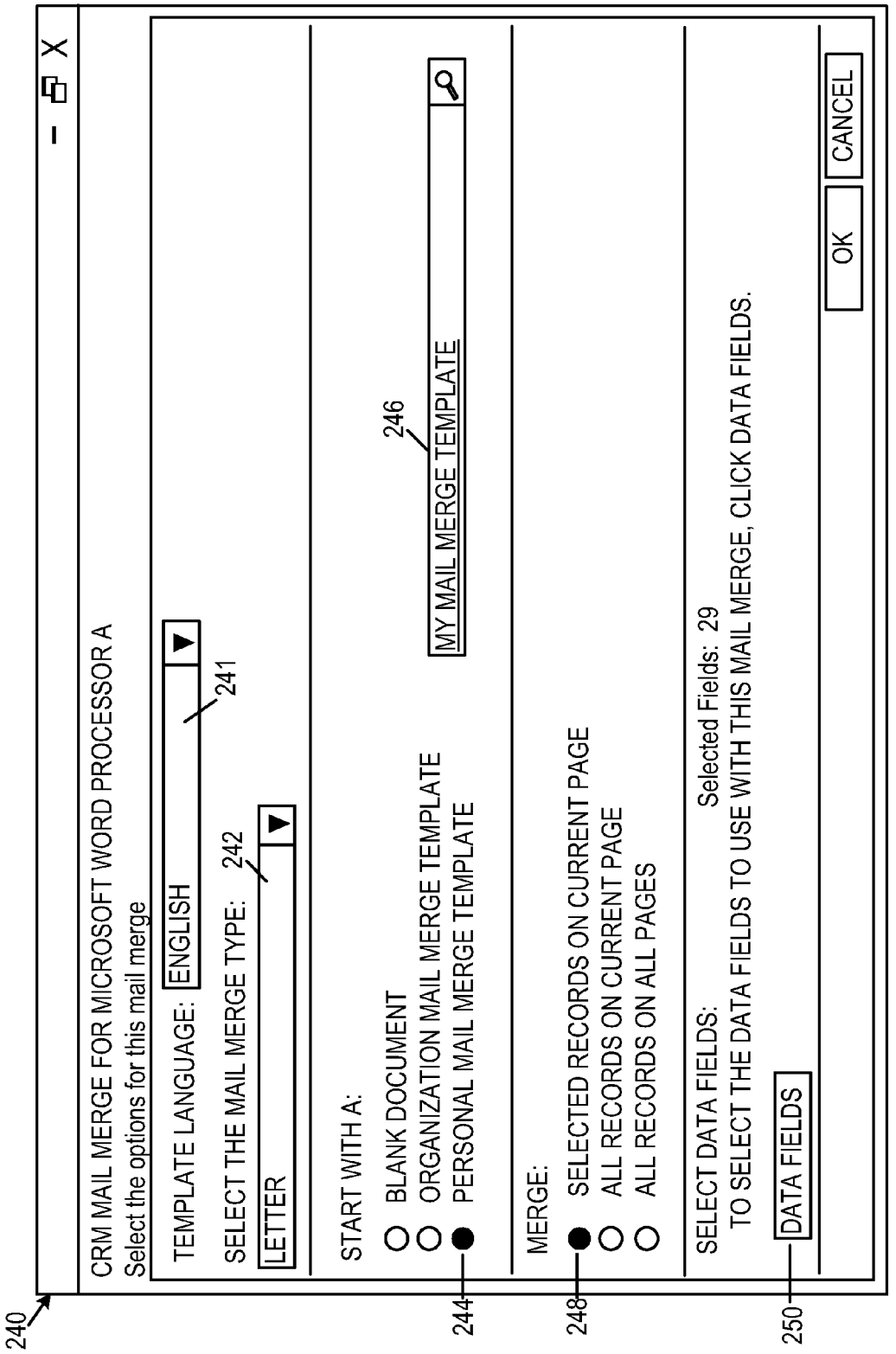
240
CRM MAIL MERGE FOR MICROSOFT WORD PROCESSOR A
Select the options for this mail merge
TEMPLATE LANGUAGE: ENGLISH
241
SELECT THE MAIL MERGE TYPE: 242
LETTER
START WITH A:
BLANK DOCUMENT
ORGANIZATION MAIL MERGE TEMPLATE
PERSONAL MAIL MERGE TEMPLATE
244
246
MY MAIL MERGE TEMPLATE
MERGE:
SELECTED RECORDS ON CURRENT PAGE
ALL RECORDS ON CURRENT PAGE
ALL RECORDS ON ALL PAGES
248
SELECT DATA FIELDS:
Selected Fields: 29
TO SELECT THE DATA FIELDS TO USE WITH THIS MAIL MERGE, CLICK DATA FIELDS.
DATA FIELDS
250
OK
CANCEL

FIG. 4

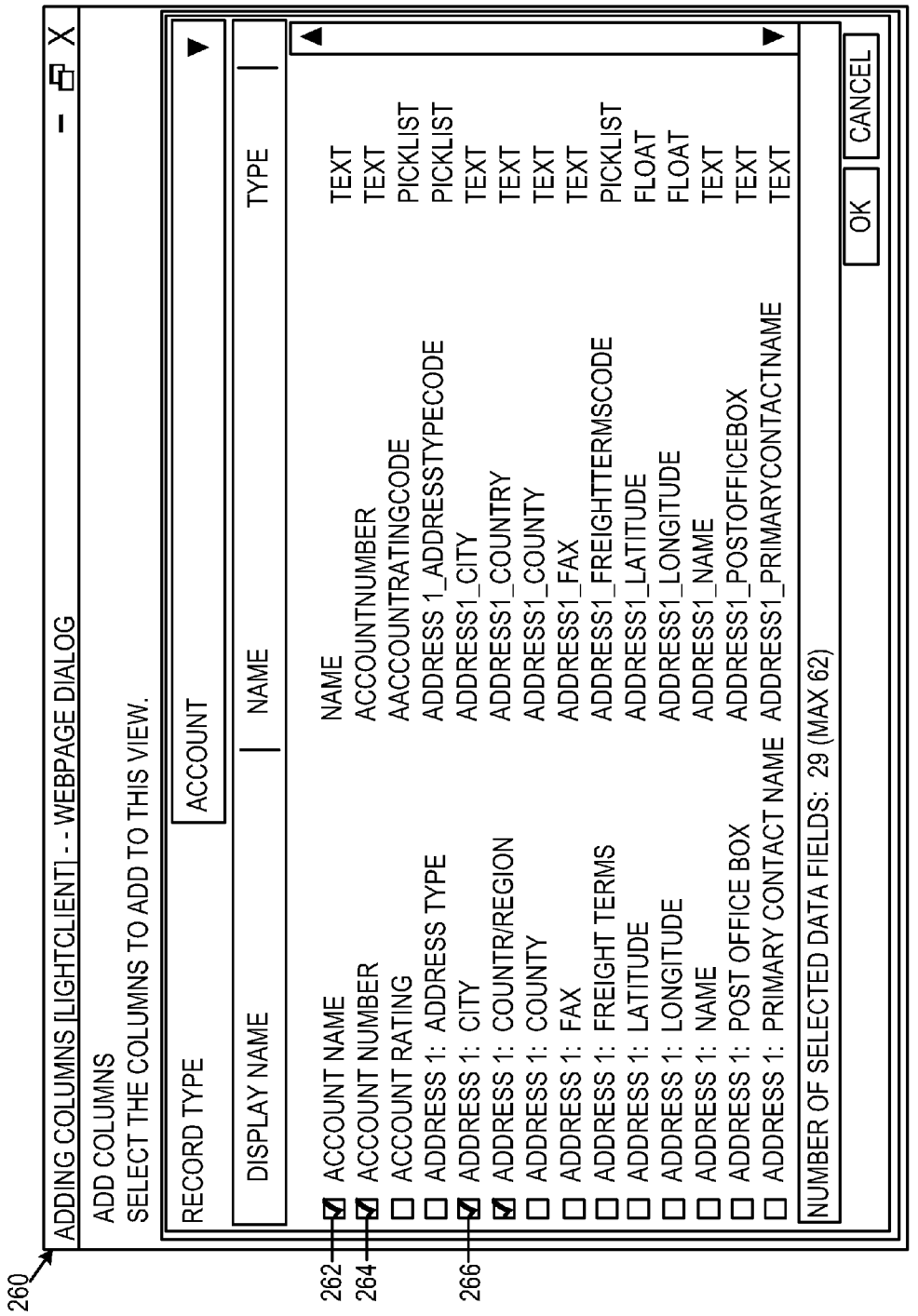
260
ADDING COLUMNS [LIGHTCLIENT] - - WEBPAGE DIALOG
ADD COLUMNS
SELECT THE COLUMNS TO ADD TO THIS VIEW.
RECORD TYPE
ACCOUNT
DISPLAY NAME
NAME
TYPE
262
264
266
ACCOUNT NAME NAME TEXT
ACCOUNT NUMBER ACCOUNTNUMBER TEXT
ACCOUNT RATING AACCOUNTRATINGCODE PICKLIST
ADDRESS 1: ADDRESS TYPE ADDRESS 1_ADDRESSTYPECODE PICKLIST
ADDRESS 1: CITY ADDRESS1_CITY TEXT
ADDRESS 1: COUNTR/REGION ADDRESS1_COUNTRY TEXT
ADDRESS 1: COUNTY ADDRESS1_COUNTY TEXT
ADDRESS 1: FAX ADDRESS1_FAX TEXT
ADDRESS 1: FREIGHT TERMS ADDRESS1_FREIGHTTERMSCODE PICKLIST
ADDRESS 1: LATITUDE ADDRESS1_LATITUDE FLOAT
ADDRESS 1: LONGITUDE ADDRESS1_LONGITUDE FLOAT
ADDRESS 1: NAME ADDRESS1_NAME TEXT
ADDRESS 1: POST OFFICE BOX ADDRESS1_POSTOFFICEBOX TEXT
ADDRESS 1: PRIMARY CONTACT NAME ADDRESS1_PRIMARYCONTACTNAME TEXT
NUMBER OF SELECTED DATA FIELDS: 29 (MAX 62)
OK
CANCEL

FIG. 5

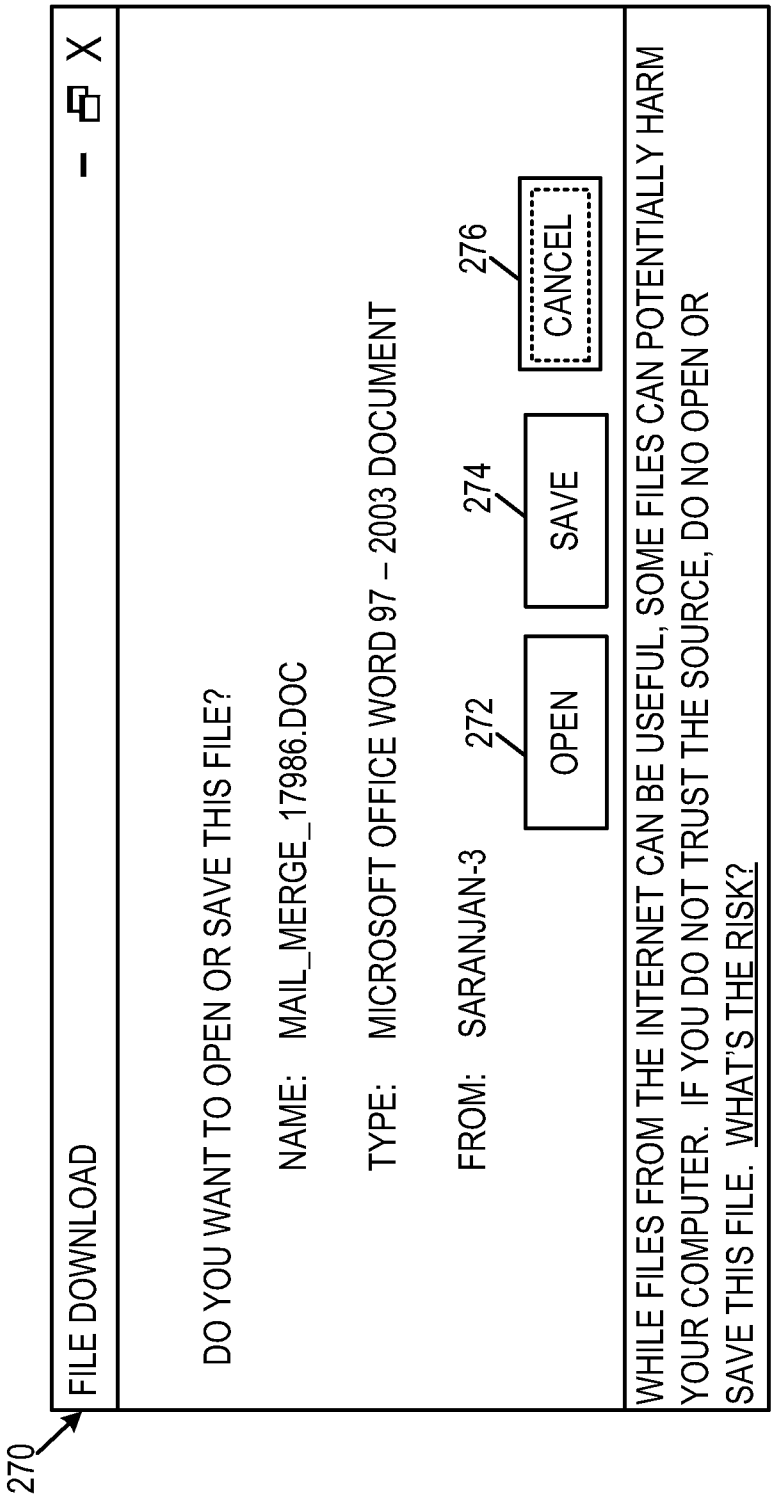
270
FILE DOWNLOAD
DO YOU WANT TO OPEN OR SAVE THIS FILE?
NAME: MAIL_MERGE_17986.DOC
TYPE: MICROSOFT OFFICE WORD 97 – 2003 DOCUMENT
FROM: SARANJAN-3
272
OPEN
274
SAVE
276
CANCEL
WHILE FILES FROM THE INTERNET CAN BE USEFUL, SOME FILES CAN POTENTIALLY HARM YOUR COMPUTER. IF YOU DO NOT TRUST THE SOURCE, DO NO OPEN OR SAVE THIS FILE. WHAT'S THE RISK?

FIG. 6

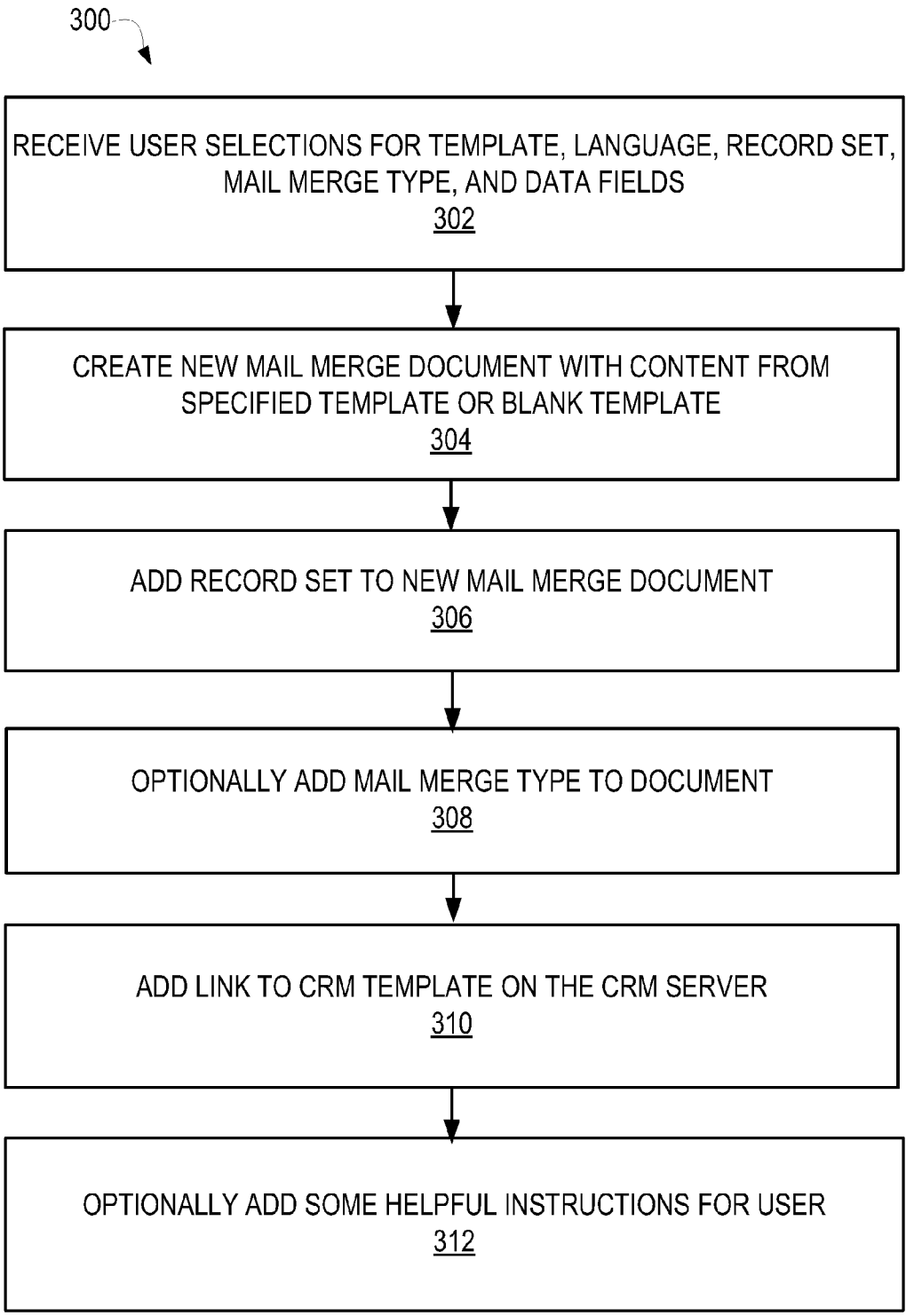
300
RECEIVE USER SELECTIONS FOR TEMPLATE, LANGUAGE, RECORD SET, MAIL MERGE TYPE, AND DATA FIELDS
302
CREATE NEW MAIL MERGE DOCUMENT WITH CONTENT FROM SPECIFIED TEMPLATE OR BLANK TEMPLATE
304
ADD RECORD SET TO NEW MAIL MERGE DOCUMENT
306
OPTIONALLY ADD MAIL MERGE TYPE TO DOCUMENT
308
ADD LINK TO CRM TEMPLATE ON THE CRM SERVER
310
OPTIONALLY ADD SOME HELPFUL INSTRUCTIONS FOR USER
312

FIG. 7

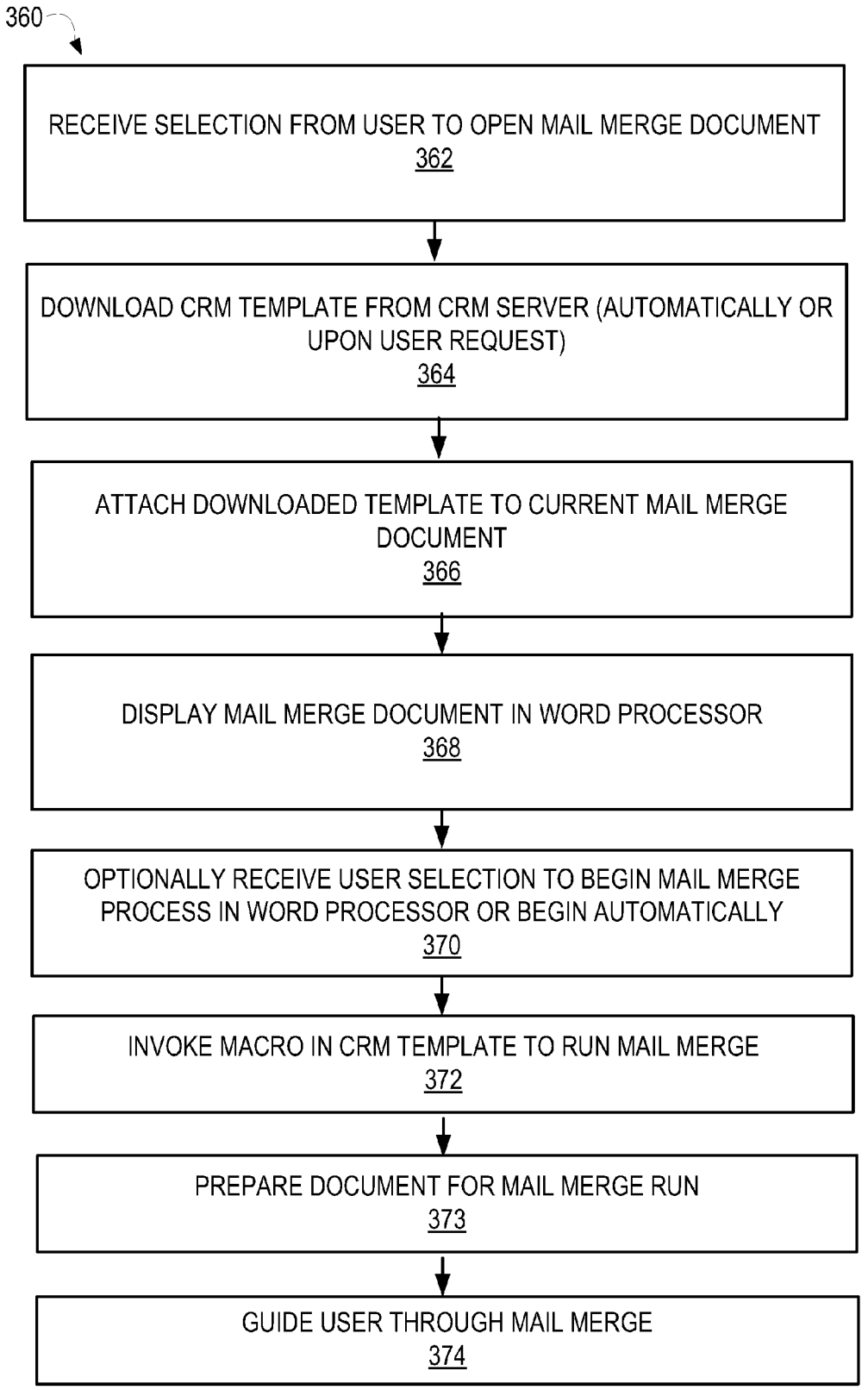
360
RECEIVE SELECTION FROM USER TO OPEN MAIL MERGE DOCUMENT
362
DOWNLOAD CRM TEMPLATE FROM CRM SERVER (AUTOMATICALLY OR UPON USER REQUEST)
364
ATTACH DOWNLOADED TEMPLATE TO CURRENT MAIL MERGE DOCUMENT
366
DISPLAY MAIL MERGE DOCUMENT IN WORD PROCESSOR
368
OPTIONALLY RECEIVE USER SELECTION TO BEGIN MAIL MERGE PROCESS IN WORD PROCESSOR OR BEGIN AUTOMATICALLY
370
INVOKE MACRO IN CRM TEMPLATE TO RUN MAIL MERGE
372
PREPARE DOCUMENT FOR MAIL MERGE RUN
373
GUIDE USER THROUGH MAIL MERGE
374

FIG. 8

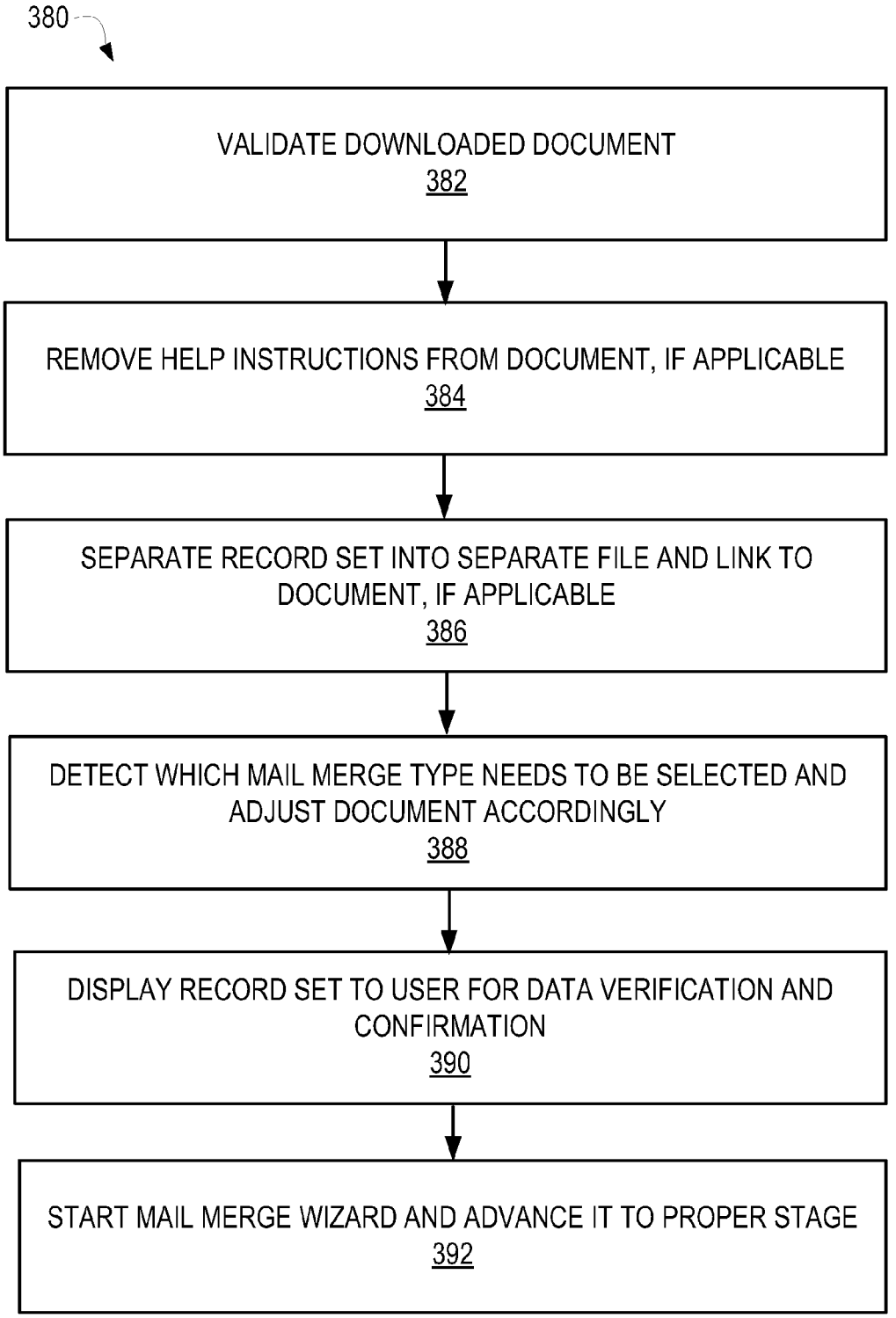
380
VALIDATE DOWNLOADED DOCUMENT
382
REMOVE HELP INSTRUCTIONS FROM DOCUMENT, IF APPLICABLE
384
SEPARATE RECORD SET INTO SEPARATE FILE AND LINK TO DOCUMENT, IF APPLICABLE
386
DETECT WHICH MAIL MERGE TYPE NEEDS TO BE SELECTED AND ADJUST DOCUMENT ACCORDINGLY
388
DISPLAY RECORD SET TO USER FOR DATA VERIFICATION AND CONFIRMATION
390
START MAIL MERGE WIZARD AND ADVANCE IT TO PROPER STAGE
392

FIG. 9

400

MAIL MERGE_17986(2).DOC – WORD PROCESSOR A

CREATE

START CRM MAIL MERGE — 402

TO START MAIL MERGE, CLICK START CRM MAIL MERGE. — 406

THE START CRM MAIL MERGE BUTTON APPEARS ON EITHER THE ADD-INS TAB OR THE MAILINGS TAB, DEPENDING ON THE MAIL MERGE TEMPLATE YOU SELECTED.

{AFTER YOU CLICK THE START CRM MAIL MERGE, THE MACRO CREATES A NEW TEXT FILE AND PUTS THE COMMENT DATA INTO IT. THE COMMENT IS THE DATA SOURCE FOR YOUR MAIL MERGE.}

CAUTION: TO RUN MAIL MERGE, YOU MUST ENABLE MACROS FOR THIS DOCUMENT. AFTER THE MAIL MERGE IS COMPLETED, DELETE THIS FILE AND THE ASSOCIATED TEXT FILE TO SAFEGUARD POSSIBLE SENSITIVE DATA.

THIS IS THE TABLE TEMPLATE FOR 2007:

NO.	FIELD	VALUE
1	NAME	<<ACCOUNT_NAME>>>
2	CITY	<<ADDRESS_1_CITY>>

408

Comment [CRM1] <TABLE><TH>account</TH><TH>Owner</TH><TH>OWNER</TH><TH>ACCIYBT_NUMBER/TH><TH>ACCCOUNT_RATINGS</TH><TH>CITY</TH><TH>ADDRESS_TYPE</TH><TH>ADDRESS_1_CITY</TH><TH>ADDRESS_1_COUNTY_REGION</TH><TH>ADDRESS_2_STREET_1</TH><TH>ADDRESS_1_STREET_3</TH><TH>ADDRESS_1_ZIP_POSTAL_CODE</TH><TH>ADDRESS_1_STATE_PROVINCE_</TH><TH>CREDIT-LIMITS</TH><TH>E-MAIL</TH><TH>FAX</TH><TH>ACCOUNT_NAME</TH><TH>RIMARY_CONTACTS</TH><TH>MAIN_PHONE</TH><TH>TICKER-SYMBOL</TH><TH>WEB_SITES</TH><TH>USER_BUSINESS_UNIT</TH><TH>USER-STREET_1</TH><TH>USER_CITY</TH><TH>USER_STREET_2</TH><TH>USER_STREET_3</TH><TH>USER_CITY</TH><TH>USER_STATE_PROVINCE</TH><TH>USER_ZIP_POSTAL CODE</TH><TH>USER_COUNTRY_REGIONS</TH><TH>USER_MAIN_PHONE</TH><TH>USER_FIRST_NAME</TH><TH>USER LAST-NAME</TH><TH>USER_TITLE</TH><TH>USER_PRIMARY -E-MAIL</TH><TH>IC>2DCF0F1C.Q4C3-DC11-9552.

FIG. 10

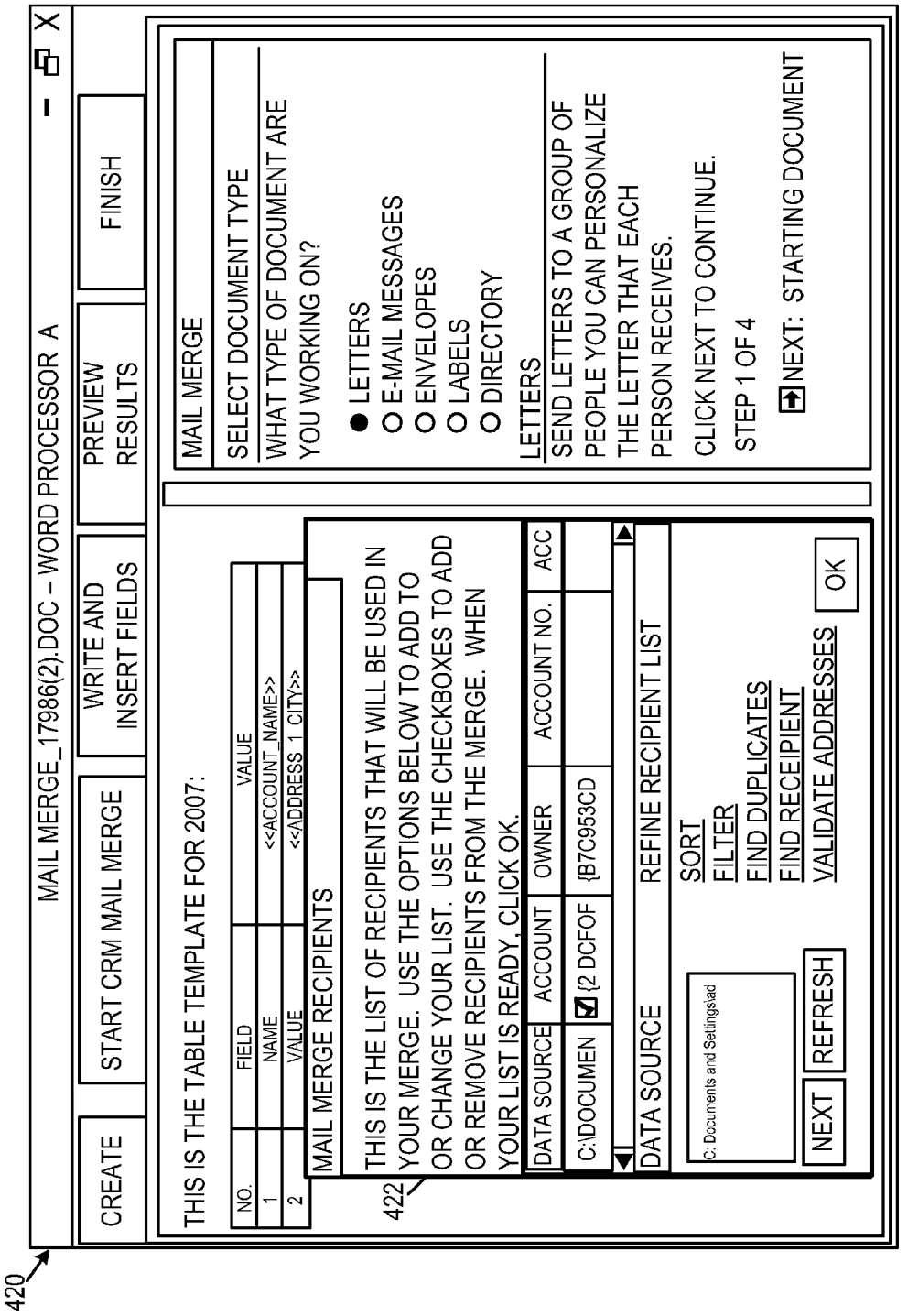
420
MAIL MERGE_17986(2).DOC – WORD PROCESSOR A
CREATE
START CRM MAIL MERGE
WRITE AND INSERT FIELDS
PREVIEW RESULTS
FINISH
THIS IS THE TABLE TEMPLATE FOR 2007:
NO.
FIELD
VALUE
1
NAME
<<ACCOUNT_NAME>>
2
VALUE
<<ADDRESS_1_CITY>>
MAIL MERGE RECIPIENTS
422
THIS IS THE LIST OF RECIPIENTS THAT WILL BE USED IN YOUR MERGE. USE THE OPTIONS BELOW TO ADD TO OR CHANGE YOUR LIST. USE THE CHECKBOXES TO ADD OR REMOVE RECIPIENTS FROM THE MERGE. WHEN YOUR LIST IS READY, CLICK OK.
DATA SOURCE
ACCOUNT
OWNER
ACCOUNT NO.
ACC
C:\DOCUMEN
{2 DCFOF
{B7C953CD
DATA SOURCE
REFINE RECIPIENT LIST
C: Documents and Settings\ad
SORT
FILTER
FIND DUPLICATES
FIND RECEIPIENT
VALIDATE ADDRESSES
NEXT
REFRESH
OK
MAIL MERGE
SELECT DOCUMENT TYPE
WHAT TYPE OF DOCUMENT ARE YOU WORKING ON?
LETTERS
E-MAIL MESSAGES
ENVELOPES
LABELS
DIRECTORY
LETTERS
SEND LETTERS TO A GROUP OF PEOPLE YOU CAN PERSONALIZE THE LETTER THAT EACH PERSON RECEIVES.
CLICK NEXT TO CONTINUE.
STEP 1 OF 4
NEXT: STARTING DOCUMENT

FIG. 11

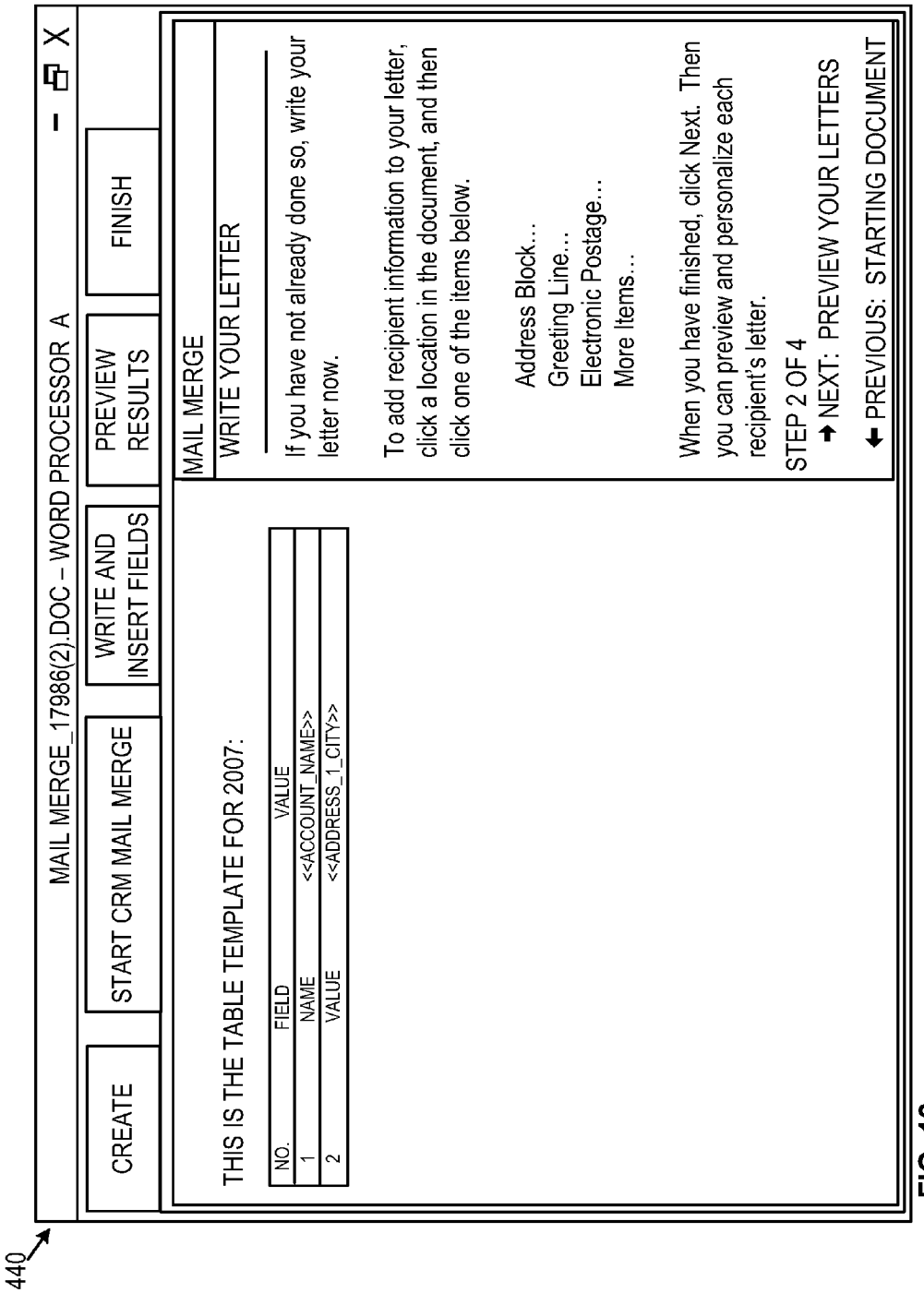
440
MAIL MERGE_17986(2).DOC – WORD PROCESSOR A
CREATE
START CRM MAIL MERGE
WRITE AND INSERT FIELDS
PREVIEW RESULTS
FINISH
THIS IS THE TABLE TEMPLATE FOR 2007:
NO. FIELD VALUE
1 NAME <<ACCOUNT_NAME>>
2 VALUE <<ADDRESS_1_CITY>>
MAIL MERGE
WRITE YOUR LETTER
If you have not already done so, write your letter now.
To add recipient information to your letter, click a location in the document, and then click one of the items below.
Address Block...
Greeting Line...
Electronic Postage...
More Items...
When you have finished, click Next. Then you can preview and personalize each recipient's letter.
STEP 2 OF 4
NEXT: PREVIEW YOUR LETTERS
PREVIOUS: STARTING DOCUMENT

FIG. 12

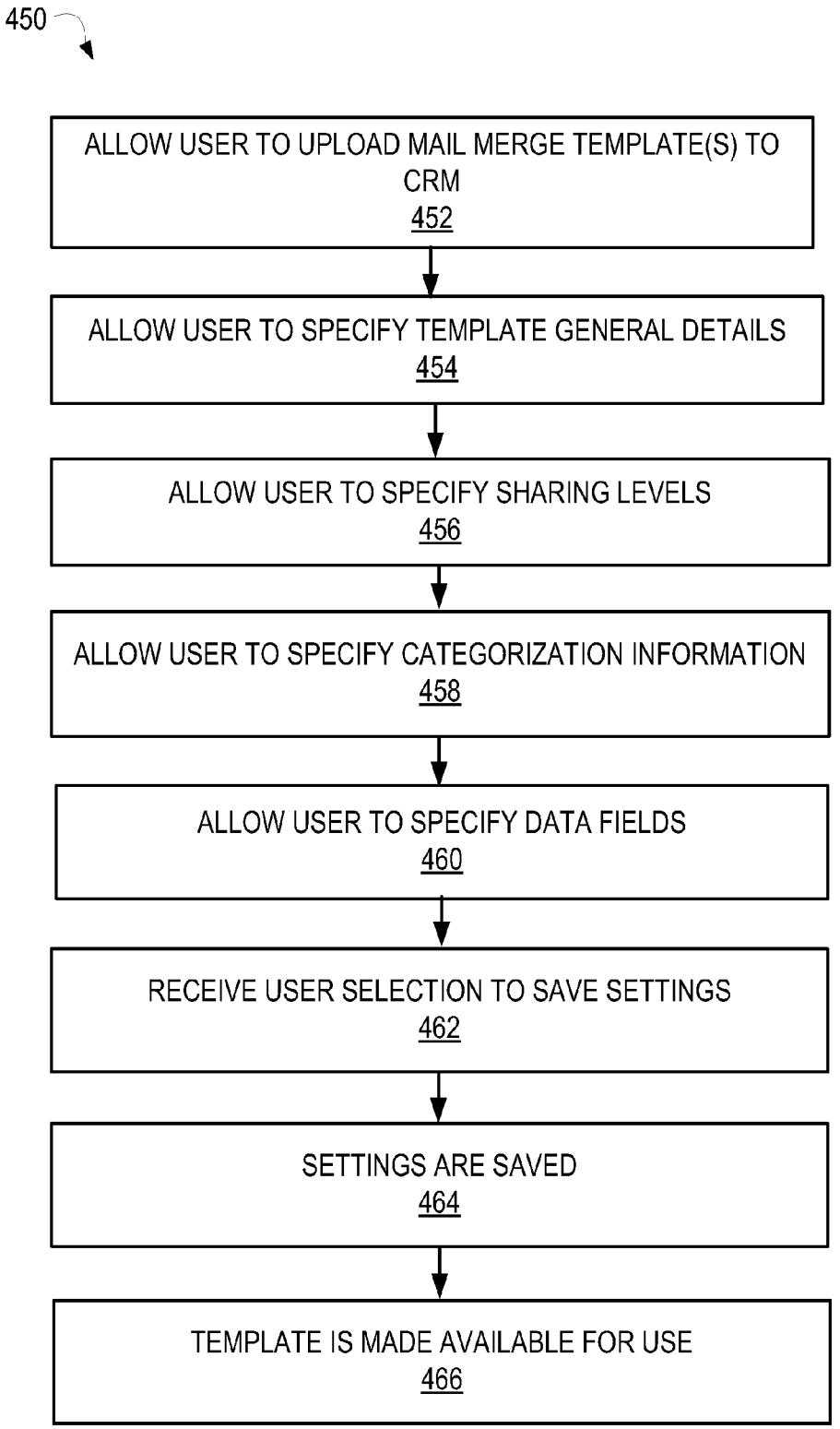
450
ALLOW USER TO UPLOAD MAIL MERGE TEMPLATE(S) TO CRM
452
ALLOW USER TO SPECIFY TEMPLATE GENERAL DETAILS
454
ALLOW USER TO SPECIFY SHARING LEVELS
456
ALLOW USER TO SPECIFY CATEGORIZATION INFORMATION
458
ALLOW USER TO SPECIFY DATA FIELDS
460
RECEIVE USER SELECTION TO SAVE SETTINGS
462
SETTINGS ARE SAVED
464
TEMPLATE IS MADE AVAILABLE FOR USE
466

FIG. 13

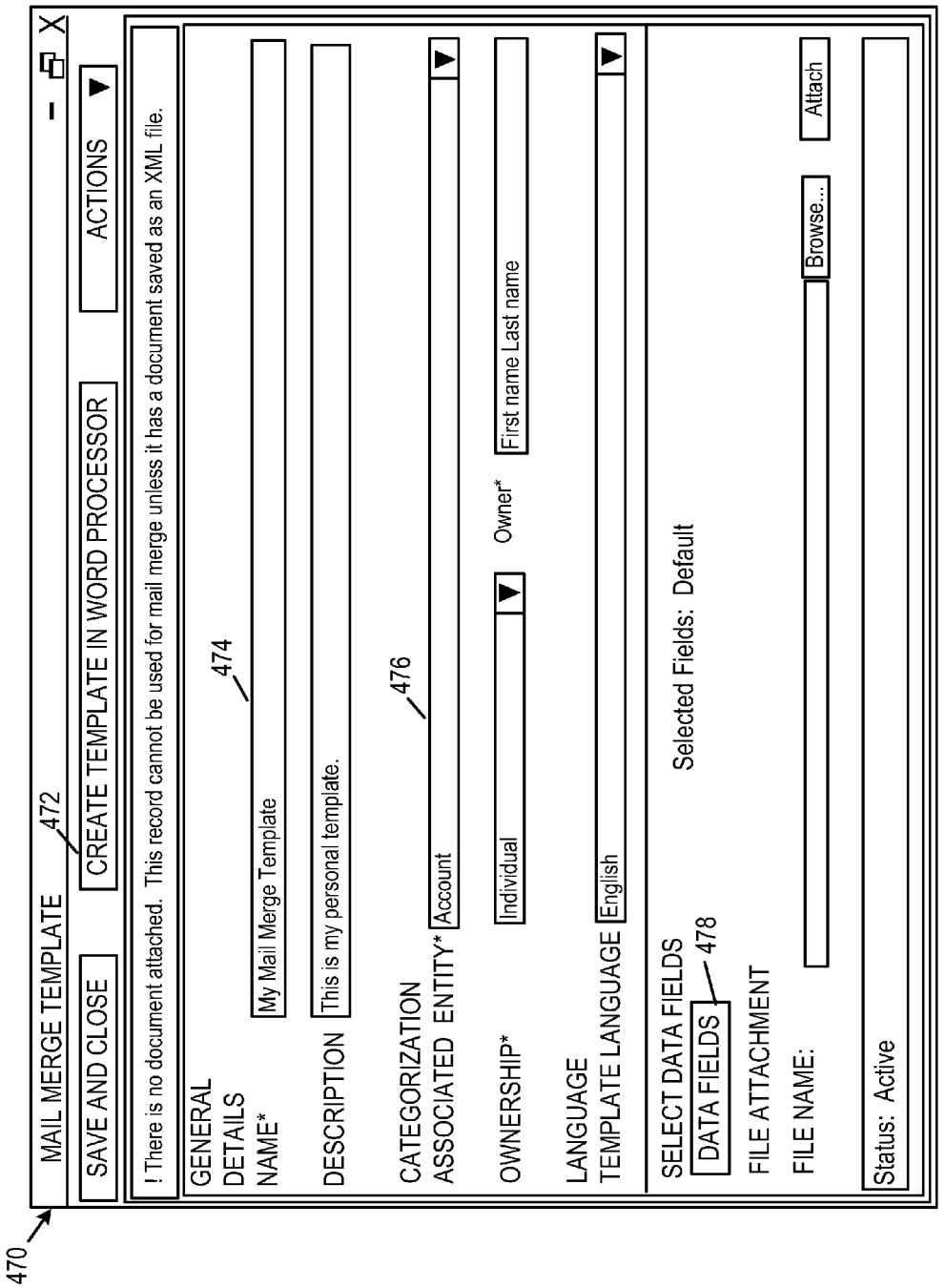
470
MAIL MERGE TEMPLATE
472
SAVE AND CLOSE
CREATE TEMPLATE IN WORD PROCESSOR
ACTIONS
! There is no document attached. This record cannot be used for mail merge unless it has a document saved as an XML file.
GENERAL DETAILS
474
NAME*
My Mail Merge Template
DESCRIPTION
This is my personal template.
CATEGORIZATION
476
ASSOCIATED ENTITY*
Account
OWNERSHIP*
Individual
Owner*
First name Last name
LANGUAGE TEMPLATE LANGUAGE
English
SELECT DATA FIELDS
Selected Fields: Default
DATA FIELDS
478
FILE ATTACHMENT
FILE NAME:
Browse...
Attach
Status: Active

FIG. 14

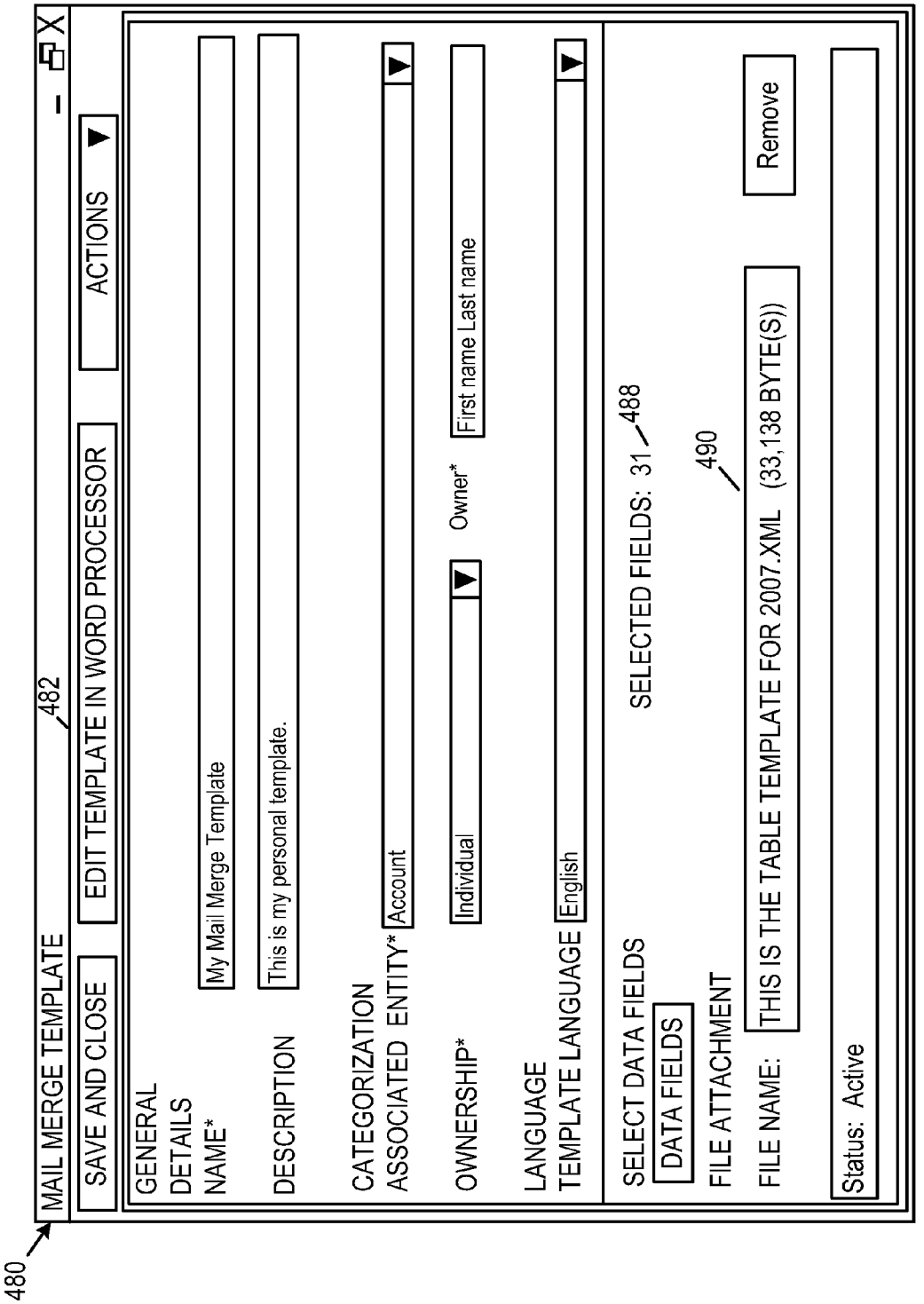
480
MAIL MERGE TEMPLATE
482
SAVE AND CLOSE
EDIT TEMPLATE IN WORD PROCESSOR
ACTIONS
GENERAL DETAILS
NAME*
My Mail Merge Template
DESCRIPTION
This is my personal template.
CATEGORIZATION
ASSOCIATED ENTITY*
Account
OWNERSHIP*
Individual
Owner*
First name Last name
LANGUAGE
TEMPLATE LANGUAGE
English
SELECT DATA FIELDS
SELECTED FIELDS: 31
488
DATA FIELDS
FILE ATTACHMENT
490
FILE NAME:
THIS IS THE TABLE TEMPLATE FOR 2007.XML (33,138 BYTE(S))
Remove
Status: Active

FIG. 15

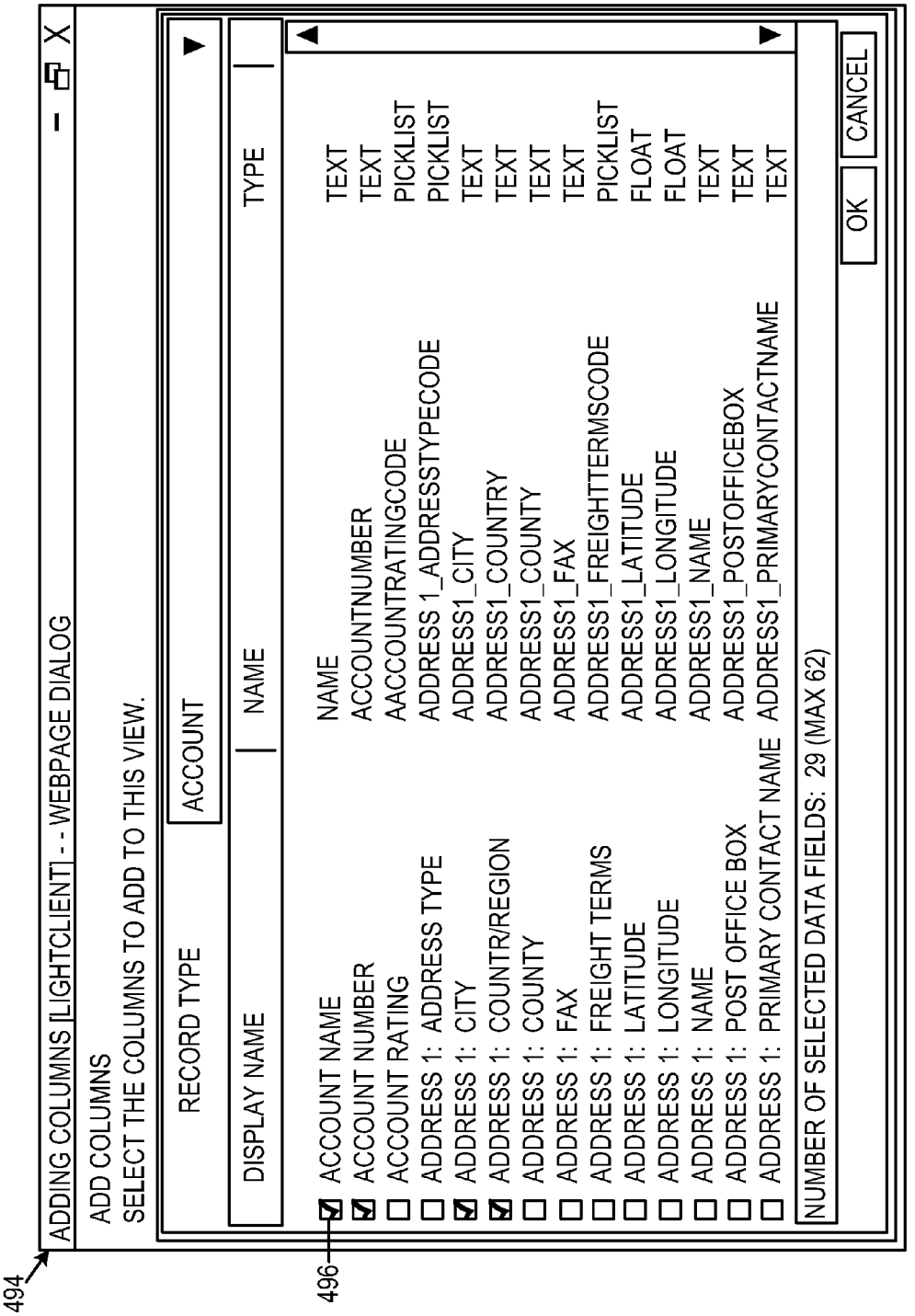
494
496
ADDING COLUMNS [LIGHTCLIENT] - - WEBPAGE DIALOG
ADD COLUMNS
SELECT THE COLUMNS TO ADD TO THIS VIEW.
RECORD TYPE
ACCOUNT
DISPLAY NAME
NAME
TYPE
ACCOUNT NAME TEXT
ACCOUNT NUMBER TEXT
ACCOUNT RATING PICKLIST
ADDRESS 1: ADDRESS TYPE PICKLIST
ADDRESS 1: CITY TEXT
ADDRESS 1: COUNTR/REGION TEXT
ADDRESS 1: COUNTY TEXT
ADDRESS 1: FAX TEXT
ADDRESS 1: FREIGHT TERMS PICKLIST
ADDRESS 1: LATITUDE FLOAT
ADDRESS 1: LONGITUDE FLOAT
ADDRESS 1: NAME TEXT
ADDRESS 1: POST OFFICE BOX TEXT
ADDRESS 1: PRIMARY CONTACT NAME TEXT
NAME
ACCOUNTNUMBER
AACCOUNTRATINGCODE
ADDRESS 1_ADDRESSTYPECODE
ADDRESS1_CITY
ADDRESS1_COUNTRY
ADDRESS1_COUNTY
ADDRESS1_FAX
ADDRESS1_FREIGHTTERMSCODE
ADDRESS1_LATITUDE
ADDRESS1_LONGITUDE
ADDRESS1_NAME
ADDRESS1_POSTOFFICEBOX
ADDRESS1_PRIMARYCONTACTNAME
NUMBER OF SELECTED DATA FIELDS: 29 (MAX 62)
OK
CANCEL

FIG. 16

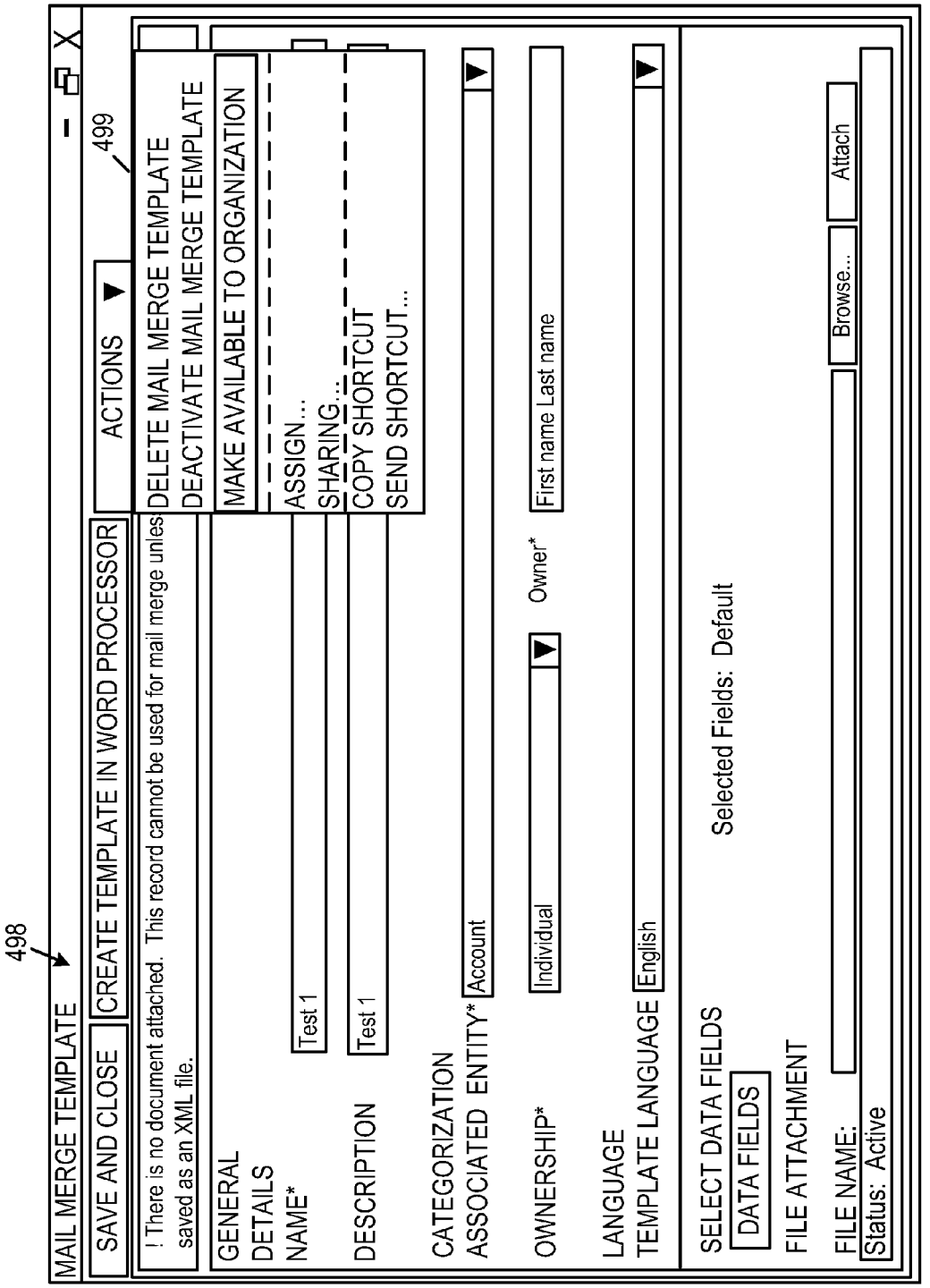
498
MAIL MERGE TEMPLATE
SAVE AND CLOSE
CREATE TEMPLATE IN WORD PROCESSOR
ACTIONS
499
DELETE MAIL MERGE TEMPLATE
DEACTIVATE MAIL MERGE TEMPLATE
MAKE AVAILABLE TO ORGANIZATION
ASSIGN...
SHARING...
COPY SHORTCUT
SEND SHORTCUT...
! There is no document attached. This record cannot be used for mail merge unles
saved as an XML file.
GENERAL DETAILS
NAME*
Test 1
DESCRIPTION
Test 1
CATEGORIZATION
ASSOCIATED ENTITY*
Account
OWNERSHIP*
Individual
Owner*
First name Last name
LANGUAGE TEMPLATE LANGUAGE
English
SELECT DATA FIELDS
DATA FIELDS
Selected Fields: Default
FILE ATTACHMENT
FILE NAME:
Browse...
Attach
Status: Active

FIG. 17

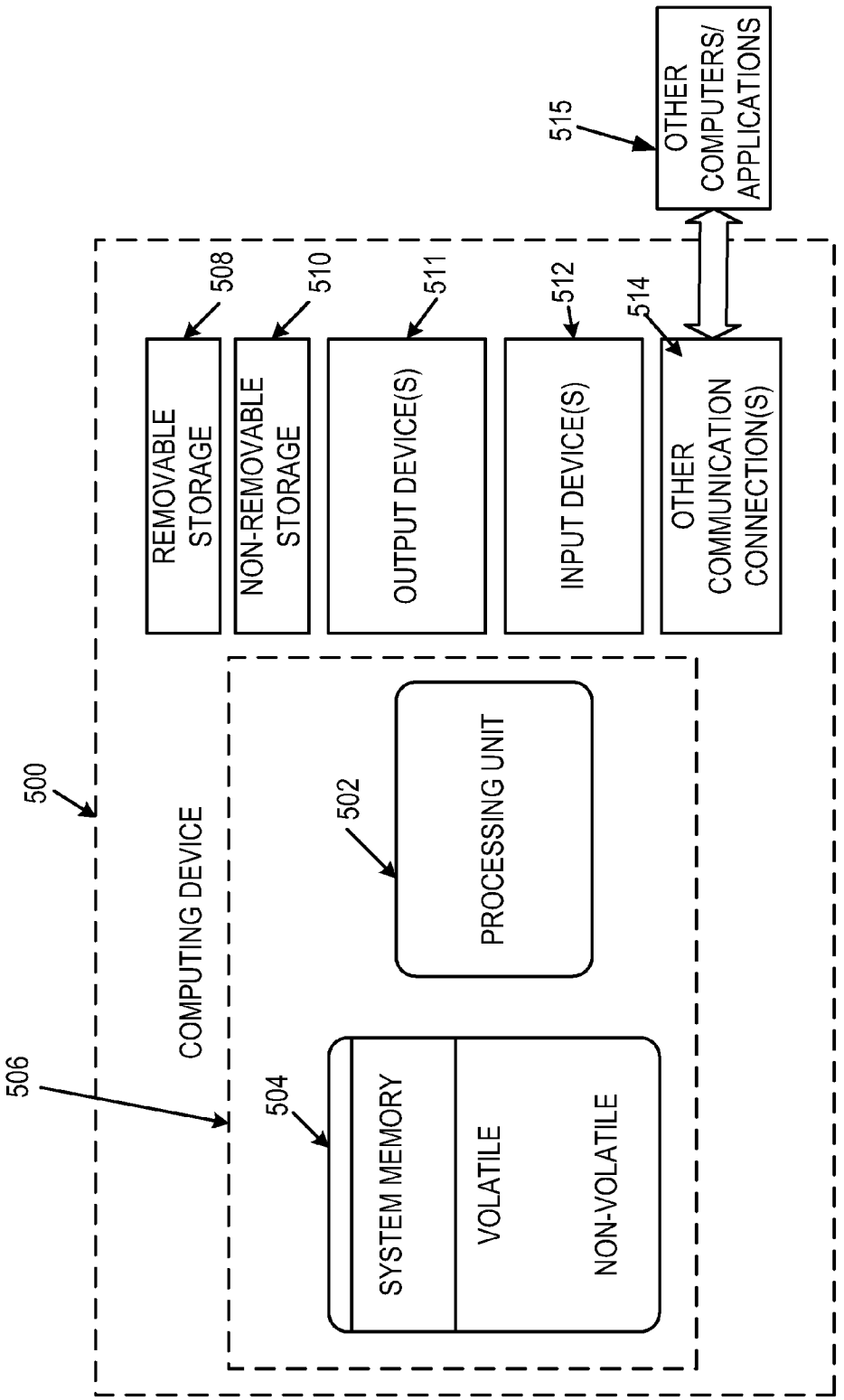
500
506
COMPUTING DEVICE
504
SYSTEM MEMORY
VOLATILE
NON-VOLATILE
502
PROCESSING UNIT
508
REMOVABLE STORAGE
510
NON-REMOVABLE STORAGE
511
OUTPUT DEVICE(S)
512
INPUT DEVICE(S)
514
OTHER COMMUNICATION CONNECTION(S)
515
OTHER COMPUTERS/ APPLICATIONS

FIG. 18

MAIL MERGE INTEGRATION TECHNIQUES

BACKGROUND

Mail merge is a feature that allows a user to customize a document and send that document to a group of people without having to type a separate letter for each person. A mail merge process typically uses an external data source on which the template document operates to dynamically produce these personalized documents.

Many customer relationship management (CRM) systems of today are Internet-based so sales people can easily access the data remotely. However, the technologies that enable mail merge to be performed are typically found on a client-side application such as MICROSOFT® Office Word. Difficulties can arise when trying to utilize mail merge features in a client-side application with data contained in an Internet-based CRM application without having to install additional programs.

SUMMARY

Various technologies and techniques are disclosed for integrating a customer relationship management application with a mail merge operation on a client-side word processor. Mail merge settings are received from a user, including a record set to use in a mail merge operation. A new mail merge document is created. The record set is added to the mail merge document. A link is added to a template that will control the mail merge operation on a client-side word processor. The linked template gets attached to the new mail merge document when opened on the client-side word processor.

In one implementation, a method for beginning a mail merge operation on a client-side word processor is described. A downloaded mail merge document is validated. The record set contained in the downloaded mail merge document is separated into one or more separate files. A mail merge wizard is started and advanced to a later stage based upon settings already specified by the user.

In one implementation, techniques for uploading and managing mail merge templates that were created in a word processor into a customer relationship management application are described. A selection is received from a user to upload a mail merge template for a word processor to a customer relationship management application. The user is prompted to specify additional template settings that are used by the customer relationship management application to help integrate a mail merge operation initiated in the customer relationship management application with the word processor. The mail merge template and additional template settings are stored in the customer relationship management application for later use.

In another implementation, a customer relationship management application that has integrated mail merge functionality is described. A request is received from a user to perform a mail merge operation from within a customer relationship management application. The user is prompted to specify mail merge settings to be used in the mail merge operation. A mail merge document is created that contains a record set to be used in the mail merge operation along with a link to a template that contains a macro for controlling the mail merge operation when opened within a client-side word processor.

This Summary was 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 features or essential features of the claimed subject matter, nor is it intended to be used as an aid in determining the scope of the claimed subject matter.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a diagrammatic view of a mail merge system of one implementation.

FIG. **2** is a process flow diagram for one implementation illustrating the stages involved in receiving user selections for a mail merge operation.

FIG. **3** is a simulated screen for one implementation that illustrates allowing a user to select one or more records to include in a mail merge from within a CRM application.

FIG. **4** is a simulated screen for one implementation that illustrates the user selecting mail merge options from within a CRM application.

FIG. **5** is a simulated screen for one implementation that illustrates the user selecting fields to include in the mail merge operation from within a CRM application.

FIG. **6** is a simulated screen for one implementation that illustrates the user being prompted to save or open the mail merge document once it has been created.

FIG. **7** is a process flow diagram for one implementation illustrating the stages involved in creating a new mail merge document upon receiving settings specified by the user in the CRM application.

FIG. **8** is a process flow diagram for one implementation illustrating the stages involved in initiating the mail merge operation on the client-side word processing application.

FIG. **9** is a process flow diagram for one implementation illustrating the stages involved in advancing the mail merge operation on the client-side word processing application to where the user can finish the operation.

FIG. **10** is a simulated screen for one implementation that illustrates an example of a mail merge document that was created by the CRM application and opened in the client-side word processing application.

FIG. **11** is a simulated screen for one implementation that illustrates prompting the user to further customize and/or verify the mail merge recipients.

FIG. **12** is a simulated screen for one implementation that illustrates advancing the mail merge operation to a proper stage where the user can then complete the mail merge operation.

FIG. **13** is a process flow diagram for one implementation illustrating the stages involved in allowing a user to manage mail merge templates on the CRM application.

FIG. **14** is a simulated screen for one implementation that illustrates allowing a user to manage a mail merge template from within a CRM application.

FIG. **15** is a simulated screen for one implementation that illustrates a mail merge template within a CRM application.

FIG. **16** is a simulated screen for one implementation that illustrates the customization of a mail merge template to select fields to include from within a CRM application.

FIG. **17** is a simulated screen for one implementation that illustrates the assignment of sharing and other security settings for a mail merge template from within a CRM application.

FIG. **18** is a diagrammatic view of a computer system of one implementation.

DETAILED DESCRIPTION

The technologies and techniques herein may be described in the general context as techniques for integrating mail merge on a client-side application with an Internet-based

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application, but the technologies and techniques also serve other purposes in addition to these. In one implementation, one or more of the techniques described herein can be implemented as features within a word processing program such as MICROSOFT® Office Word, from a customer relationship management system such as MICROSOFT® Dynamics, or from any other type of program or service that provides mail merge functionality.

As mentioned in the Background Section, it can be difficult to utilize mail merge features on a client-side application when the data needed for the mail merge is stored in an Internet-based application such as a customer relationship management (CRM) system. One existing technique that is sometimes utilized for combining the two include the creation of a smart client that knows how to pull down the data source in the correct format and then hook it up to the client side application running mail merge. One problem with this approach is that it requires installation of a client-side application or plug-in in order for the interaction between the client-side application and the Internet-based application to work correctly.

Another technique that is sometimes used is to mimic the mail merge behavior on the server (such as directly within the CRM or other Internet-based application). In such a scenario, the user inputs are entered, templates are created, and final documents that can be printed or emailed out are created, all from within the Internet-based application. One problem with this approach is that the mail merge functionality is limited in comparison to what the user can achieve with the client-side mail merge process available through the word processor program on the user's desktop.

In one implementation, mail merge techniques are described that integrates a CRM application and a mail merge operation on a client-side word processor into one user experience via the use of an attached template containing macros, such as signed macros that have a digital signature identifying their source. The terms "customer relationship management application" and "CRM application" as used herein are meant to include any type of Internet-based application that stores relationship data such as name, address, and/or phone number of customers, prospects, and/or vendors. The term "client-side word processor" as used herein is meant to include a program installed locally on a user's computer that has a mail merge feature.

The mail merge techniques described herein can be utilized without having to install a plug-in or application on the client-application (beyond the existing word processor itself), and the existing word processing mail merge process is integrated and enhanced. Data for the mail merge (such as the mail merge template, data source and other user selections) is pulled from the CRM application as one single document to the client-side application. The document contains a link to the CRM template present on the CRM server.

When the document is opened inside a word processor such as MICROSOFT® Office Word, the linked CRM template is downloaded and attached to the current document. The linked template also contains a signed macro. When the signed macro is invoked (such as upon user selection or automatically), the individual components of the document are disassembled and the document is prepared for running the mail merge operation on the client-side application to dynamically generate documents for distribution.

FIG. **1** shows a high level view of one implementation of a mail merge system **100**. The user can utilize a web browser **102**, such as MICROSOFT® Internet Explorer or Firefox, to log on to a CRM server **104** and view the data. The user can invoke the mail merge process by selecting a mail merge option, such as by clicking on a mail merge icon; the user then makes the selection to the options given. A mail merge document **110** (such as an XML file) is then generated based upon the user selections, and is then downloaded automatically or upon user selection. The mail merge document **110** contains the record set for the mail merge and other mail merge settings. The term "mail merge document" as used herein is referring to the document generated by the customer relationship management system that contains the record set and other mail merge settings that will then be used in the word processor. This mail merge document **110**, when opened in the word processor **106**, causes the word processor **106** to download a CRM template from the server **104** and install the CRM macro **108**. The term "CRM template" as used herein is referring to a template file that contains a macro that is used to integrate a customer relationship management application with a mail merge operation in a word processor. In another implementation, CRM macro **108** can also be part of the downloaded document **110**.

In one implementation, the CRM macro **108** is invoked when user clicks a CRM option from within the word processor. The CRM option becomes available once the CRM template is attached to the document. In another implementation, the CRM macro **108** is invoked automatically when the mail merge document **110** is opened in the word processor. In either scenario, the CRM macro **108** is responsible for operating on the current document to prepare the current document for running mail merge inside of the word processor **106**. Such preparation can include extracting the record set from the mail merge document and putting the record set into a separate file **112**.

In one implementation, the CRM template that is located on the CRM server is available for anonymous access so the user does not have to re-authenticate or maintain any authentication status after download of the mail merge document. The mail merge system **100** will be described in further detail in FIGS. **2-18**.

Turning now to FIGS. **2-17**, the stages for implementing one or more implementations of mail merge system **100** are described in further detail. In some implementations, the processes of FIG. **2-17** are at least partially implemented in the operating logic of computing device **500** (of FIG. **18**).

FIG. **2** is a process flow diagram **200** for one implementation illustrating the stages involved in receiving user selections for a mail merge operation. A selection is received from a user to start a mail merge operation from a CRM application (stage **202**). A language selection is optionally received from the user (stage **203**), such as to specify the language (e.g. English, Spanish, etc.) to be used for creating the contents of the template. A template selection is received from the user (stage **204**) to indicate which pre-defined template that contains the body of the document should be used. A record set selection is received from the user (stage **206**) to indicate which records (i.e. customers and/or vendors) should be included in the mail merge. A mail merge type selection is received from the user (stage **208**), such as to indicate that the mail merge will be a letter, an envelope, etc. Data field selections are received from the user (stage **210**) to specify which fields should be included for each record (such as name, address, etc.). These user specified settings are described in further detail in FIG. **3-6**. A mail merge document is then created based upon the user selections (stage **212**), as described in further detail in FIG. **7**. The generated mail merge document is streamed out for download in response to the user selections—(stage **212**). The web browser, after downloading the streamed out file prompts the user to save or open the mail merge document (stage **214**).

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FIG. **3** is a simulated screen **230** for one implementation that illustrates allowing a user to select one or more records to include in a mail merge from within a CRM application. Upon selecting one or more records **234** from the CRM application, the user can select a mail merge option **232** to invoke the mail merge operation.

FIG. **4** is a simulated screen **240** for one implementation that illustrates the user selecting various mail merge options from within a CRM application. These options are just examples, and in other implementations, fewer and/or additional options could also be presented. A template language option **241** is displayed to allow the user to choose the language to be used for the template. In one implementation, template language option **241** is only displayed when the user has multiple languages enabled on his computer (such as through a multi-language pack that is installed on his computer). A mail merge type option **242** is displayed to allow the user to select the type of mail merge being created. A few non-limiting examples of the type of mail merge can include a letter, envelope, brochure, label, email, and so on. A template selection option **244** is also displayed which allows the user to select a blank document or an existing mail merge template to use. The term "mail merge template" as used herein is meant to include a template that contains wording, macros and/or other settings to use as a starting point when creating a new mail merge document. Record merge options **248** are displayed to allow the user to select which records should be merged, such as the selected records on the current page, all records on the current page, or all records on all pages. Data field option **250** is displayed to allow the user to specify which data fields should be included in the mail merge operation.

FIG. **5** is a simulated screen **260** for one implementation that illustrates the user selecting fields to include in the mail merge operation from within a CRM application. In one implementation screen **260** is displayed when the user selects the data field option **250** on FIG. **4**. Screen **260** allows the user to select which fields should be included in the mail merge, such as account name **262**, account number **264**, and city **266**. Once the user has specified the various mail merge options (shown in FIGS. **4** and **5**), a mail merge document is created according to the user specified settings. The user is then prompted to open the mail merge document or download it for later use. This is illustrated in FIG. **6**.

FIG. **6** is a simulated screen **270** for one implementation that illustrates the user being prompted to save or open the mail merge document once it has been created. In the example shown, the user can select the open option **272** to open the mail merge document from within the word processor, or the save option **274** to save the mail merge document to a specified location. If the user wishes to cancel the mail merge operation, then cancel option **276** can be selected.

Turning now to FIG. **7**, a process flow diagram **300** for one implementation is shown that illustrates the stages involved in creating a new mail merge document upon receiving settings specified by the user in the CRM application. Users selections are received for the template, language, record set, mail merge type, and/or data fields (stage **302**), as previously described in FIGS. **3-6**. A new mail merge document is created that contains content from the specified template or from a blank template (stage **304**). In other words, a new document is created that contains the wording from the template that the user specified should be used for the mail merge, if one was specified. The wording could include something like this:

Dear <<First name>>,

I wanted to welcome you to the <<city>>.

Welcome!!

Regards,

Customer Service

If no template was specified, then a blank template can be used. The record set that was previously specified by the user is added to the new mail merge document (stage **306**), such as in a comment section as shown in FIG. **10**. In one implementation, the record set that is used as the data source of the mail merge needs to have two sections, a header and a body section, such as the table illustrates below:

First name	Last name	City
John	Doe	Redmond
Jane	Doe	Seattle

When the mail merge is later run, the <<First name>> and <<city>> will get replaced by the records in the record set, which in this example would generate two different customized documents. Note that in one implementation, the column headers also serve as mail merge tags in the document. When a mail merge is later run on the same set of records for the English language, the headers will be in English. If the mail merge is run for the German language, then the headers will be the German equivalent of the first name, last name, and city. The German template will have the tags in German and when the mail merge runs, the information will be displayed in German to the user running the mail merge.

In addition to the record set and the template body, the mail merge type is optionally added to the document (stage **308**), if one was previously specified by the user. Data source mappings can optionally be added to map from the data fields in the CRM application to fields in the word processor. A link is added to the CRM template on the CRM server (stage **310**). The link to the CRM template on the CRM server is what allows the client-side word processor application to download and invoke the mail merge operation through a signed macro without having to install a plug-in or other application onto the client-side. In another implementation, instead of adding a link to the CRM template on the CRM server, the CRM template is included directly within the mail merge document. Some helpful instructions are optionally added for the user (stage **312**), such as those shown in FIG. **10**.

FIG. **8** is a process flow diagram **360** for one implementation illustrating the stages involved in initiating the mail merge operation from the client-side word processing application. A selection is received from the user to open the mail merge document in the word processor (stage **362**). This selection can be received from the user by opening the mail merge document directly from the word processor, or by selecting an option to have the web browser open it (**272** of FIG. **6**). The mail merge document is the one that was previously created according to the processes described in FIGS. **1-7**. The CRM template is downloaded from the CRM server automatically upon opening the mail merge document, or upon any user prompt that the word processor may provide for download confirmation (stage **364**). The downloaded template is then attached to the current mail merge document (stage **366**). The mail merge document is displayed in the word processor (stage **368**).

After the template has been attached, a user selection is optionally received to begin the mail merge operation in the word processor, or the mail merge operation begins automatically (stage **370**). A macro is invoked in the CRM template to run the mail merge operation (stage **372**). The macro prepares the document for the running of the mail merge operation

(stage **373**), as described in further detail in FIG. **9**. The user is guided through the mail merge operation (stage **374**).

FIG. **9** is a process flow diagram **380** for one implementation illustrating the stages involved in advancing the mail merge operation on the client-side word processing application to where the user can finish the operation. In one implementation, the process described in FIG. **9** begins when the user selects an option to begin the mail merge operation from within a word processor (after the CRM template has been attached to the mail merge document). The downloaded document that contains the CRM template is validated (stage **382**). Help instructions are removed from the document, if applicable (stage **384**). The record set is separated into a separate file and linked to the document, if applicable (stage **386**). The mail merge type that needs to be selected is detected, and the document is adjusted accordingly (stage **388**). For example, if the mail merge type is set to labels or envelopes, then the document size is readjusted to fit the label or envelope specification. In one implementation, if the label or envelope mail merge type is selected, then the word processor's dialog for adjusting the document for label or envelope output is displayed.

The record set is optionally displayed to the user for data verification and confirmation (stage **390**). The mail merge wizard is started within the word processor, and the wizard is advanced to the proper stage (stage **392**) so the user does not have to specify information that they already specified from within the CRM application previously.

FIG. **10** is a simulated screen **400** for one implementation that illustrates an example of a mail merge document that was created by the CRM application and opened in the client-side word processing application. In the example shown, upon selecting the start CRM mail merge option **402**, the CRM macro present in the CRM template that was downloaded from the CRM server is invoked. Helpful instructions **406** are displayed to the user to explain this process. The record set **408** is contained within a comment section within the word processing document. Record set **408** contains the actual data values that will be used by the mail merge operation. Once the mail merge operation has been started upon user selection of the start CRM mail merge option **402**, the record set **408** that is contained in the comment section gets extracted into a separate file or other location that can be used as a data source for the mail merge.

FIG. **11** is a simulated screen **420** for one implementation that illustrates prompting the user with a dialog box **422** to allow the user to further customize and/or verify the mail merge recipients. In one implementation, dialog box **422** is only displayed when the user did not previously specify the desired mail merge recipients from within the CRM application when launching the mail merge operation earlier in this process. In another implementation, dialog box **422** is displayed to allow the user to further customize and/or verify the mail merge recipients.

FIG. **12** is a simulated screen **440** for one implementation that illustrates advancing the mail merge operation to a proper stage where the user can then complete the mail merge operation. In other words, there may be multiple steps in the typical mail merge operation on the word processor. However, through the settings received from the user previously in the CRM application, this mail merge operation can be advanced to a later stage in the process so the user is not prompted again to specify the same settings a second time.

FIG. **13** is a process flow diagram **450** for one implementation illustrating the stages involved in allowing a user to manage mail merge templates from within the CRM application. The user is able to upload mail merge templates to the CRM application (stage **452**), such as mail merge templates that were originally created in a word processor. Various settings can be specified for the mail merge template, including some or all of the settings described in this figure, and/or additional settings. The user is able to specify general details for the template (stage **454**). The user is able to specify sharing levels (stage **456**). The user is able to specify categorization information (stage **458**). The user is able to specify data fields (stage **460**). A user selection is received to save these settings (stage **462**). These settings are then saved (stage **464**) and the template is then made available for use (stage **466**). Some exemplary screens will now be illustrated in FIGS. **14-17** to illustrate these customizable settings in further detail

FIG. **14** is a simulated screen **470** for one implementation that illustrates allowing a user to manage a mail merge template from within a CRM application. A new template can be created in the word processor program upon selecting the create template in word processor option **472**. General details **474** can be specified for a specified mail merge document, such as the template name and description. Categorization information **476** can be specified, such as an associated entity, ownership of the template, owner name, and language of the template. Data fields **478** that should be used in the template can also be specified.

FIG. **15** is a simulated screen **480** for one implementation that illustrates a mail merge template within a CRM application. In the example shown in FIG. **15**, data fields have been selected **488**, and a file attachment has been specified **490** that contains the template. If the user wishes to edit the template in the word processor, then the edit template in word processor option **482** can be selected. The user can also select the language of the template, and the permissions of the template, such as individual versus organizational.

FIG. **16** is a simulated screen **494** for one implementation that illustrates the customization of a mail merge template to select fields to include from within a CRM application. Screen **494** is displayed when the user selects the data fields **478** button on FIG. **15**. In the example shown, the user has selected the account name, account number and address one fields to include in the specified mail merge template. The Record Type field is a drop-down list that contains the associated entity and all entities related to the associated entity. Thus, in one implementation, the user can not only select the fields of the associated entity, but also can select the fields of the linked entity associated with it. In such an implementation, when the user changes the selection on the Record Type, the list of fields displayed changes to represent the fields of that entity.

FIG. **17** is a simulated screen **498** for one implementation that illustrates the assignment of sharing and other security settings for a mail merge template from within a CRM application. In the example shown, various options and actions that can be set for the mail merge template are displayed in an actions list **499**, such as delete mail merge template, deactivate mail merge template, make the template available to the organization, assign security permissions to the template, share the template, and so on. For example, a selected template can be made private so that only certain users can access it, or it can be made public so that everyone who can access the system can access it. These are just examples, and other actions could also be used in other implementations.

As shown in FIG. **18**, an exemplary computer system to use for implementing one or more parts of the system includes a computing device, such as computing device **500**. In its most basic configuration, computing device **500** typically includes at least one processing unit **502** and memory **504**. Depending on the exact configuration and type of computing device,

memory **504** may be volatile (such as RAM), non-volatile (such as ROM, flash memory, etc.) or some combination of the two. This most basic configuration is illustrated in FIG. **18** by dashed line **506**.

Additionally, device **500** may also have additional features/functionality. For example, device **500** may also include additional storage (removable and/or non-removable) including, but not limited to, magnetic or optical disks or tape. Such additional storage is illustrated in FIG. **18** by removable storage **508** and non-removable storage **510**. Computer storage media includes volatile and nonvolatile, removable and non-removable media implemented in any method or technology for storage of information such as computer readable instructions, data structures, program modules or other data. Memory **504**, removable storage **508** and non-removable storage **510** 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 accessed by device **500**. Any such computer storage media may be part of device **500**.

Computing device **500** includes one or more communication connections **514** that allow computing device **500** to communicate with other computers/applications **515**. Device **500** may also have input device(s) **512** such as keyboard, mouse, pen, voice input device, touch input device, etc. Output device(s) **511** such as a display, speakers, printer, etc. may also be included. These devices are well known in the art and need not be discussed at length here.

Although the subject matter has been described in language specific to structural features and/or methodological acts, it is to be understood that the subject matter defined in the appended claims is not necessarily limited to the specific features or acts described above. Rather, the specific features and acts described above are disclosed as example forms of implementing the claims. All equivalents, changes, and modifications that come within the spirit of the implementations as described herein and/or by the following claims are desired to be protected.

For example, a person of ordinary skill in the computer software art will recognize that the examples discussed herein could be organized differently on one or more computers to include fewer or additional options or features than as portrayed in the examples.

What is claimed is:

1. A method for generating a mail merge document from a customer relationship management application that can integrate with a mail merge operation on a client-side word processor comprising the steps of:

receiving one or more mail merge settings from a user including a record set to use in a mail merge operation including records to be included, a language selection, a mail merge type including a letter, envelope, label, brochure and email, and a data field selection including an account name, a number, a city, and an address for a template, wherein the user is enabled to select one of a blank document and an existing mail merge template;

downloading the template from the customer relationship management application through one of: an existing authentication of the user and an anonymous authentication;

creating a new mail merge document;

adding helpful instructions to the new mail merge document to explain the mail merge document process, wherein the helpful instructions include instructions for starting a mail merge, enabling macros, and deleting a text file after completion of the mail merge to safeguard sensitive data;

displaying a mail merge document user interface enabling the user to select recipients for the mail merge operation from a list, specify a type of document to be used in the mail merge operation and refine a list of selected recipients by one or more of sorting, filtering, finding duplicates, finding recipients, and validating addresses;

adding the record set to the new mail merge document; and

adding a link to the template that will control the mail merge operation on a client-side word processor, the template being operable to be attached to the new mail merge document and opened on the client-side word processor.

2. The method of claim **1** further comprising the steps of: streaming out the new mail merge document.

3. The method of claim **1**, further comprising the steps of: upon receiving a selection from the user to open the mail merge document, launching the client-side word processor and opening the new mail merge document.

4. The method of claim **3**, further comprising the steps of: using the link in the new mail merge document to download the template containing a macro that will control the mail merge operation on the client-side word processor.

5. The method of claim **1**, wherein the template contains a macro.

6. The method of claim **5**, wherein the macro is a signed macro.

7. The method of claim **1**, wherein the record set is added to the new mail merge document in a comments section of the new mail merge document.

8. The method of claim **1**, wherein the one or more mail merge settings received from the user include a mail merge template to use that contains wording to include in the new mail merge document.

9. A method for beginning a mail merge operation on a client-side word processor comprising the steps of:

validating a downloaded mail merge document that contains settings specified previously by a user, the mail merge document including a record set to use as a data source along with a link to a template that contains a signed macro for controlling a mail merge operation when opened within a client-side word processor, wherein the record set includes actual data values to be used by the mail merge operation;

downloading the template from a customer relationship management application through one of: an existing authentication of the user and an anonymous authentication, wherein the template includes one of: language from a specified template and language from a blank template;

adding at least one data source mapping to the template for mapping data fields of the data source to fields in the client-side word processor;

separating the record set contained in the downloaded mail merge document into one or more separate files;

starting a mail merge wizard and advancing the mail merge wizard to a later stage based upon settings already specified by the user;

allowing the user to specify a sharing level for the template, a categorization information, and one or more data fields associated with the mail merge document, wherein categorization information includes at least one of an associated entity, an ownership of the template, an owner name, and a language of the template;

streaming out the downloaded mail merge document for download; and

prompting the user to one of: open and save the downloaded mail merge document and cancel the mail merge operation.

10. The method of claim **9**, wherein the mail merge type is determined from the settings specified by the user, and the downloaded mail merge document is adjusted based upon the mail merge type.

11. The method of claim **9**, wherein the record set is moved to a separate file and linked to the mail merge document as a data source for the mail merge operation.

12. The method of claim **9**, wherein the record set is displayed to the user for data verification.

13. A computer-readable memory device having computer-executable instructions for causing a computer to perform steps comprising:

downloading a mail merge document in response to a selection from a user;

validating the downloaded mail merge document including a customer relationship management application template;

receiving a selection from the user to upload a mail merge template for a word processor to a customer relationship management application, wherein a template selection option allows selection of at least one of a blank document and an existing mail merge template to use;

determining enabled languages within a computer of the user;

adding a template language option into the mail merge template to prompt the user to select one of the enabled languages to be used for the mail merge template, wherein the template language option is displayed when there are more than one enabled languages at the word processor executed on the user's computing device;

prompting the user to specify additional template settings that are used by the customer relationship management application to help integrate a mail merge operation initiated in the customer relationship management application with the word processor including a language selection for the mail merge template, recipients selection for the mail merge operation from a list, a type of document specification to be used in the mail merge operation, and a list of selected recipients refinement by one or more of sorting, filtering, finding duplicates, finding recipients, and validating addresses;

displaying a data field option enabling the user to specify data fields included in the mail merge operation;

allowing the user to specify a sharing level, a categorization information, and one or more data fields associated with the mail merge template;

adding at least one data source mapping to the mail merge template for mapping data fields in the customer relationship management application to fields in the word processor;

storing the mail merge template and additional template settings in the customer relationship management application for later use; and

attaching the downloaded mail merge template to the downloaded mail merge document.

14. The computer-readable memory device of claim **13**, wherein the additional template settings include sharing levels for the mail merge template.

15. The computer-readable memory device of claim **13**, wherein the additional template settings include data fields for the mail merge template.

16. The computer-readable memory device of claim **13**, wherein the additional template settings include categorization information for the mail merge template.

17. The computer-readable memory device of claim **13**, further having computer executable instructions operable to cause a computer to perform steps comprising:

making the mail merge template available to a plurality of users for use in mail merge operations initiated in the customer relationship management application.

18. The computer-readable memory device of claim **17**, wherein the plurality of users who are given access to the mail merge template is controlled by a sharing level that was assigned to the mail merge template.

19. The computer-readable memory device of claim **13**, wherein the mail merge template contains wording to include in any new mail merge documents that are created based upon the mail merge template.

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