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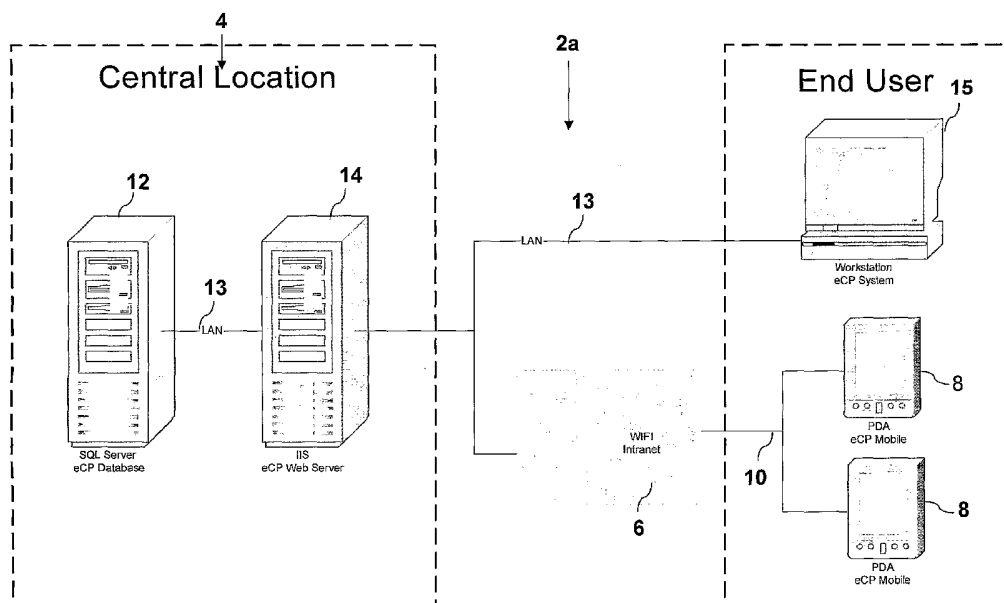
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(54) Title: A HEALTHCARE ADMINISTRATION SYSTEM



(57) Abstract: A healthcare administration system includes a computer programmed to define a database for storing patient information and connected to a network at a central location. At least one wireless communication device is connected to the network at an end user location, the, or each, wireless communications device being configured to define an interface with the database, via the network.

## A HEALTHCARE ADMINISTRATION SYSTEM

### 5 TECHNICAL FIELD

The present invention relates to a healthcare administration system.

The present invention also relates to a wireless communication device which is configured to permit a user to interface with a remote database.

10 Additionally, the present invention relates to a software product which, when executed, facilitates said interface with the remote database.

The present invention also relates to a method of administering a healthcare system.

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### BACKGROUND

Infirm and Aged people are often reliant on palliative care in healthcare facilities such as nursing homes and hospitals. Carers are continually challenged by the varying needs of patients or residents under their care, as each patient has a unique set of issues which require constant attention. It follows that it is important for information records outlining the requirements for each patient to be readily accessible. However, the Applicant has found that keeping accurate and up to date records is extremely challenging as the physical condition of patients is continually subject to change. Manually amending these records by hand can be a laborious task, particularly when the amendments are substantial.

Patient information records are generally kept in close proximity to the patient and, accordingly, a carer must go to the patient to view the patient's information. The Applicant has identified a need for a system whereby a carer can access and manipulate patient information from a location remote from a centrally located database in which patient information is stored. This need also extends to a situation where the carer attends to patients at their homes. In such cases, it is both difficult and inconvenient for carers to have readily

available patient information, particularly when the carers have to travel from one patient to the other.

5 The Applicant has conceived the present invention to address this need and to provide a system in which patient information can be centrally stored and managed. In particular, the Applicant has conceived the present invention to provide a means whereby patients can be cared for by carers with full and complete information relating to the patients at their disposal.

## 10 **Definitions**

“Care Intervention” – data representing any process that is carried out by a carer to care, treat, control or otherwise interact with a patient.

15 “Carer” – any person, including professionals such as nurses, doctors or specialists employed in the healthcare industry.

“Computer” – a computational device including one or more processors including personal computers (PCs), mainframes, servers or the like.

20 “Patient” – any person who is a patient or a resident in a healthcare facility such as a hospital or aged care home, or in the community who receives care at home. In this specification, the words “patient” and “resident” are to be considered interchangeable.

25 “Patient Information” – information relating to a patient that includes information that would usually be collected at a healthcare facility, such as: mobility, food allowances/restrictions, personal hygiene issues, toileting issues, bladder management, bowel management, behavioural characteristics, emotional characteristics, social and human needs,  
30 medication needs, therapy needs, vision, hearing, and any other information that could assist in patient management.

“Patient Profile” – A description of a patient that can be stored electronically and that is based at least partially on the patient information and is stored in tables to facilitate associations and retrieval of the patient information.

- 5 “Electronic Care Plan (ECP)” – Data representing a series of actions to be taken when dealing with a particular patient and based at least partially on the patient profile.

- 10 “Wireless communication” - communication which does not require the use of a wired link, including radio frequency (RF) links such as Bluetooth®, for example, or any other long distance wireless protocols, such as code division multiple access (CDMA) broadband.

- 15 “Personal Digital Assistant (PDA)” – A portable computational device that is configured to communicate wirelessly with other computational devices, via a network, such as a combination of a wireless network and the Internet.

## **SUMMARY OF THE INVENTION**

- 20 According to a first aspect of the invention, there is provided a healthcare administration system that includes

- a computer programmed to define a database for storing patient information and connected to a network at a central location; and  
at least one wireless communication device connected to the network at an end user location, the, or each, wireless communication device being  
25 configured to define an interface with the database, via the network.

The computer may include a database server for storing and managing the database and a web server for interfacing the database with the network.

- 30 The network may be a Wireless Fidelity (WIFI) intranet through which the, or each, wireless communication device interfaces with the web server.

The, or each, wireless communication device may be a personal digital assistant (PDA).

The system may include at least one workstation computer at the end user location that interfaces with the web server via one of a local area network (LAN) and the Internet.

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Said interface defined by the wireless communication device may be in the form of a virtual private network (VPN).

According to a second aspect of the invention, there is provided a method of administering a healthcare system, the method including the steps of:

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inputting data representing patient information into a database;  
manipulating the patient information to generate patient profiles;  
establishing a wireless communication protocol between the database  
and a wireless communication device; and

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generating an interface on the wireless communication device so that the wireless communication device can interface with the database.

The step of maintaining the database may include the step of generating patient profiles within the database.

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The method may include the step of generating electronic care plans (ECP's) using the patient profile.

The method may include the step of providing a notes interface so that a carer can enter further patient information into the database to be accessible via the interface.

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The method may include the step of generating care interventions based on the ECP's.

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The method may include the step of generating reports from data stored in the database.

According to a third aspect of the invention, there is provided a software product for use in a healthcare administration system, the software product being executable on a computer and being configured so that, when executed, the software product is capable of carrying out the method as described above.

According to a fourth aspect of the invention, there is provided a software product for use in a healthcare administration system, the software product being executable on a computer and being configured so that, when executed, the software product is capable of carrying out the following steps:

- providing a database in which patient information can be stored;
- manipulating patient information to generate patient profiles;
- establishing a wireless communication protocol between the database and a wireless communication device; and
- generating an interface on the wireless communication device so that the wireless communication device can interface with the database.

The software product may be configured to define an application service provider (ASP) to manage web forms to be displayed on the wireless communication device.

The ASP may be configured to generate web form architecture to permit a carer to log in to the healthcare administration system.

The ASP may be configured to generate the web form architecture such that the PDA carries out one or more of the following steps: prompts a carer to enter data representing a facility in which a patient resides; generates menu options to facilitate access to patient information and to facilitate the input of data, such as note data to the database.

The ASP may be configured to generate the web form architecture such that the PDA can carry out one or more of the following steps: provides a log on menu for an administrator; generates menu options to facilitate access to information including care interventions.

The ASP may be configured to generate the web form architecture to define a care intervention.

- 5 The ASP may be configured to generate the web form architecture such that the PDA can communicate the assignment of the care intervention to a carer.

The ASP may be configured to generate the web form architecture such that the PDA can prompt a carer to input data indicating whether or not the care  
10 intervention is complete.

The software product may be configured to provide a relational database. In particular, the software product may be configured to generate a care intervention table of the relational database such that the care intervention  
15 table stores data relating to care interventions generated by the software product.

The software product may be configured to generate a care intervention groups table of the relational database such that the care intervention groups  
20 table stores data relating to care interventions associated with particular facilities at which the care interventions are carried out.

The software product may be configured to generate a care intervention group facility table such that the care intervention group facility table stores data  
25 relating to all facilities linked to particular intervention groups.

The software product may be configured to generate a care intervention note table, such that the care intervention note table relates notes and  
30 corresponding care interventions.

The software product may be configured to generate a care intervention status table, such that the care intervention status table stores status codes used for respective care interventions.

According to a fifth aspect of the invention, there is provided a software product for use in a healthcare administration system, the software product being executable on a personal digital assistant (PDA) and being configured so that, when executed, establishes an interface with the software product as described above.

The software product may be configured so that the PDA can generate a graphic user interface (GUI) to permit a carer to interface with the software product of the third and fourth aspects of the invention.

The software product may be configured so that the PDA can generate a decision tree to permit a carer to input data representing whether or not one or more of the following steps have been carried out by the carer: a particular care intervention has been completed; progress notes are to be input.

The software product may be configured so that the PDA can communicate details relating to said one or more of the steps to the database.

According to sixth aspect of the invention, there is provided a personal digital assistant (PDA) programmed with a software product as described above.

The personal digital assistant may be Internet-enabled.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

Preferred features, embodiments and variations of the invention may be discerned from the following Detailed Description which provides sufficient information for those skilled in the art to perform the invention. The Detailed Description is not to be regarded as limiting the scope of the preceding Summary of the Invention in any way. The Detailed Description will make reference to a number of drawings as follows:

Figure 1 is a schematic diagram showing a broad layout of a system infrastructure for a first embodiment of a healthcare administration system in accordance with the invention;

Figure 2 is a broad flowchart illustrating a method, in accordance with the invention, for generating a patient profile within the parameters of the healthcare administration system;

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Figure 3 is a flowchart showing an example of a care intervention process carried out within the parameters of the healthcare administration system;

Figure 4 is a page of a GUI generated on a wireless communication device of the invention by a software product of the invention, for a care intervention schedule;

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Figure 5 is a schematic diagram showing a broad layout of a system infrastructure for a second embodiment of a healthcare administration system in accordance with the present invention;

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Figure 6 is a schematic diagram showing hotkeys generated by the software product on the wireless communication device in the form of a PDA;

Figure 7 is a representation of a ratings and funding report generated for a patient by the software product for facilitating data entry into a database of the healthcare administration system;

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Figure 8a is a representation of a first page of a worksheet summary generated for a patient by the software product;

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Figure 8b is a representation of a further page of the worksheet summary of Fig. 8a;

Figure 8c is a representation of a first page of a worksheet relating to a care status of the patient of Fig. 8a generated by the software product;

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Figure 8d is a representation of a further page of the worksheet of Fig. 8c;

Figure 8e is a representation of a further page of the worksheet of Fig. 8c;

Figure 9 is a block diagram showing the overall logical architecture of the first embodiment of the healthcare administration system;

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Figure 10 is a block diagram showing the web form architecture for a staff member logon generated on the PDA of the invention by the software product;

10 Figure 11 is block diagram showing the web form architecture for information relating to patients which is generated on the PDA by the software product;

Figure 12 is a block diagram showing the web form architecture of a "to do" list generated on the PDA by the software product;

15 Figure 13 is a block diagram showing the web form architecture for an administrator log on generated on a workstation by the software product;

20 Figure 14 is a block diagram showing the logical design for a care intervention process carried out within the parameters of the healthcare administration system;

Figure 15 is a block diagram of a relational database generated by the software product which includes tables generated by the software product;

25 Figure 16 is a block diagram showing the web form relationships for PDA log on;

Figure 17 is a block diagram showing the web form relationships generated by the software product for logging on as a staff member;

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Figure 18 is a block diagram showing the web form relationships generated by the software product for logging on as an administrator;

Figure 19 is a block diagram showing various web forms generated by the software product for different care plans; and

Figure 20 is a block diagram showing various web forms generated by the software product for clinical data collection sheets.

### **DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS**

A first embodiment of a healthcare administration system 2a, according to the present invention is shown in Figure 1. In this particular embodiment, the system 2a is described with reference to aged care whereby the patients are long term residents. However, it is to be understood that the system 2a could be equally applicable to hospital resident care where patients are short term residents, or other similar care systems.

The healthcare administration system 2a includes a computer 4 at a central location. The computer 4 defines a database for storing resident information and is connected to a network 6. In the present embodiment, the network 6 is a wireless fidelity (WI-FI) intranet. The healthcare administration system 2a also includes a pair of wireless communication devices in the form of personal digital assistants (PDAs) 8. Each PDA 8 is interfaced to the WI-FI 6 via a wireless communication link 10. The computer 4 includes a database server 12 for storing and managing a database of resident information. Additionally, the computer 4 also includes a web server 14 for interfacing the database with the WI-FI 6. The database server 12 and web server 14 are interfaced together through a local area network (LAN) 13.

The healthcare administration system 2a enables a carer to manage resident information stored on the database using a PDA 8. In use, the PDA 8 is typically located at an end user location which is remote from the central location where the computer 4 is located. The healthcare administration system 2a also includes a work station computer 15 which is connected to the computer 4 via the LAN 13. The work station computer 15 enables a carer to view and manipulate the resident information stored on the database server 12.

The PDA 8 is loaded with a software product in accordance with the invention which, when executed, facilitates an interface between the PDA 8 and the computer 4. Advantageously, resident information is stored in a single  
5 database at the central location. Carers such as doctors and nurses are able to interface with the database using the PDA 8 when they are not located in close proximity to either the database or the resident. A carer can readily view and modify resident information as he or she wanders around the care facility in which the resident resides. Furthermore, if the PDA 8 is Internet-  
10 enabled, a carer can view and modify such information at a home of the resident.

In Figure 2, reference numeral 16 generally indicates a flowchart that broadly illustrates a method, in accordance with the invention, of generating a resident  
15 profile within the parameters of the healthcare administration system 2a.

An aged care (AC) document 18 is prepared on the resident admission date, and contains general information relating to the resident such as address details. A resident care status (RCS) document 20 is prepared using details  
20 from the AC document 18 and includes information about particular care requirements for the resident.

In addition, assessment forms 22 and data collection forms 24 are prepared. A number of electronic care plans 26 are prepared using resident information  
25 from the RCS document 20, the assessment forms 22 and the data collection forms 24. The care plans 26 outline particular care requirements of residents, and resident information can be shared between care plans 26 via electronic notes entered at 34.

30 A software product of the invention is configured to generate care intervention data at 28 based upon the electronic care plans 26. Care interventions outline how associated care plans 26 for a resident are to be implemented. Care interventions are also based upon details relating to additional resident

information including any additional treatments, or acute care requirements entered at 30, and prescribed activities entered at 32.

The software product includes a log file 36 in which information is stored. Any  
5 modifications made to resident information can be stored in the log file 36  
which is located in the central location. The software product is configured to  
store details regarding the status of both complete and incomplete care  
interventions in the log file 36. The software product is also configured to  
10 store data collected from the RCS document 20, the assessment forms 22,  
the data collection forms 24, the care plans 26, care intervention data input by  
a carer actioning a care intervention, and any notes in the log file 36. The  
software product is configured to generate sample reports from the log file 36.  
These sample reports typically include: incomplete care intervention data; all  
log entries made within a 24 hour period for a particular resident; all changes  
15 made since a previous resident care status (RCS) assessment in care plans  
26 which may give rise to a change in an RCS category and a listing of all  
activities for a resident in the previous week. The notes entered at 34 are  
sent to the log file 36 and typically include doctor's notes, case conference  
notes, and process/incident notes.

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The carer can view and modify resident information using the PDA 8. The  
PDA 8 is configured to receive care intervention data which is generated by  
the software product of the invention. Additionally, the PDA 8 is configured to  
receive data from the log file 36. The PDA 8 is configured so that the carer  
25 has access to data by using a range of hotkeys which are available on the  
PDA 8.

Figure 3 shows an example of a care intervention which has been generated  
from a care plan 26 by the software product. The care intervention relates to  
30 the bathing of a particular resident named Mrs. Smith.

Initially, at step 38, a carer or a group of staff are assigned to carry out the  
care intervention on the resident.

At step 40, the software product generates a decision tree on the PDA 8 based on whether or not the care intervention has been completed. If the carer inputs an affirmative response, the software product records the current date, time and carer identification number in the log file 36 (step 42).

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At step 44, the software product generates a decision tree on the PDA 8 based on whether or not any progress notes are to be recorded. If the carer inputs a negative response, the care intervention is closed at step 46. If the carer inputs a positive response, the software product generates an input field so that the progress notes are entered by the carer at step 48.

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The software product then passes control to step 50, where the software product generates a decision tree based on whether or not the inputting of progress notes is complete so that the software product can evaluate whether or not all of the progress notes have been recorded. The decision tree automatically defaults to "no" at step 52, in which case the software product records an incomplete care intervention and passes control back to step 50. If the carer inputs a positive response at step 50, the software product stores details of the input progress notes in the log file 36 and appends the notes to staff details previously entered into the log file 36 (step 54).

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If subsequent to step 40, the carer inputs a negative response (step 56), the software product records the current date, time, and carer identification number in the log file 36 (step 58) together with details of the incomplete care intervention.

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The software product then generates a decision tree at step 60, based on whether or not there are any notes to be recorded. If the carer inputs a negative response, the software product will flag the care intervention at step 62 for the attention of the carer's supervisor. If the carer inputs a positive response, the software product generates an interface for the user to enter notes at step 64 and passes control to step 66 where a decision tree is generated based on whether or not the notes to be recorded are incomplete. The decision tree at step 66 automatically defaults to "no" (step 68) in which

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case the software product records an incomplete care intervention and passes control back to step 66. If the carer inputs a positive response at step 66, the entered notes are stored in the log file 36 and the details of the incomplete care intervention are recorded to be followed up by the carer's supervisor at a later stage (step 70).

Figure 4 shows a page of a graphical user interface (GUI) 72 for a care intervention generated by the software product on the PDA 8. The GUI 72 provides a schedule by which carers can assist residents in their daily routines. The schedule includes information regarding the type of care to be provided to the resident 74, the daily frequency at which the care should be provided 76 (i.e. morning, afternoon and night), and the days of the week 78 (i.e. Mon, Tue, etc.). The information is thus used by carers to complete care interventions that includes timing, information about the resident, and work instructions to assist in carrying out the care intervention. All of the foregoing information is available to the carer via the PDA 8 when the software product is executed.

According to a second embodiment of the present invention, there is provided a healthcare administration system 2b as shown in Figure 5. With reference to Figures 1 to 4, like reference numerals refer to like parts, unless otherwise specified. The healthcare administration system 2b includes a structured query language (SQL) database server 12 which is interfaced to a server 74, for example an Atlas server 74. The database server 12 is also interfaced with a web server (not shown) which, in turn, interfaces with the Internet 76 via a wide area network (WAN) 78. At a first end user location 21, there is provided a virtual private network (VPN) 80 which provides an interface between the Internet 76 and a number of work station computers 15. The work station computers 15 are interfaced to the VPN 80 via an Asymmetric Digital Subscriber Line (ADSL) modem 82. There is also provided a number of Internet-enabled PDA's 8 which are interfaced with the ADSL modem 82 via a wireless link 10.

The healthcare administration system 2b also includes a number of the fixed work station computers 15 at a second end user location 23 which are each interfaced to a LAN 13. There is also provided a number of PDA's 8 which are interfaced with the LAN 13 via a wireless link 10.

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The PDA's 8 are able to run conventional software packages such as Microsoft Internet Explorer as well as tailored software products for managing resident information stored in the SQL database. The PDA's 8 at the first user location 21 enable carers to view and modify resident information from a remote location. In contrast, the PDA's 8 at the second user location 23 enable the carers to view and modify resident information at a care facility in which the residents reside or at the homes of such residents. Hence, resident information is maintained within the centrally located SQL database 12 which is accessible using PDA's 8 both operating in the care facility and from locations remote from the care facility.

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The healthcare administration systems 2a, 2b have the benefit of requiring that only one database be maintained and backed-up. In addition, reports and statistics can be generated using the resident information on the database with the PDA's 8, and carers are able to access resident information on the centrally located database from a number of locations simultaneously. Carers thus have the latest progress notes, care plans and other resident information available to them, whether at work or at home. The healthcare administration systems 2 track a history of care plans 26 and care intervention changes which allows carers to readily view the changing care needs of a particular resident.

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Carers are also able to view resident notes using the PDA 8. The types of notes to be viewed include: notes to attach to care interventions generated from within care plans 26 to assist carers in completing those care interventions; notes to the care plans 26; and notes which are passed to care interventions which are generated by non-associated care plans 26.

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Figure 6 shows a list of hotkeys which are generated by the software product to facilitate interfacing the PDA 8 with the web server 14. The hotkeys minimize cluttering of the relatively small PDA 8 displays and allow for quick activation of the various carer functions (F). The safety hotkey F1 can be used  
5 to display precautionary information in relation to a care intervention, prior to displaying the care intervention. For example, a carer could be forewarned that a resident is violent, before showering the resident when executing the care intervention. Other hotkeys include a behaviour hotkey F2, a carer alert hotkey F3, a communication hotkey F4, a medical alert hotkey F5 and a  
10 mobility hotkey F6, each of which are available to the carer at any time during a care intervention, whether at a facility or at a home of the resident.

Returning to Figure 5, the software product is configured so that the resident care status (RCS) reports 20 can be generated using the PDA 8 or computers  
15 15 and printed on printers 84 which are interfaced with the server 74. Resident care status reporting enables a carer to generate comprehensive reports with the software product in relation to residents including, for example, reports related to a resident's funding status. Examples of funding status reports (FSR) are shown in Figures 7, 8a and 8b.

20 In Figure 7, the FSR shows a rating 86 generated by the software product in response to answers to a questionnaire input by the carer using a PDA 8 for a range of criteria for a resident. A funding amount 88 is calculated by the software product based upon a total score 90.

25 Figure 8c shows a RCS worksheet generated for a resident by the software product. The RCS worksheet contains: a title block 92 which includes patent information; a scoring section 94 in which a score is allocated for various resident attributes; and a summary block 96.

30 The conceptual and logical design of the first embodiment of the healthcare administration system 2a (as shown in Figure 1) is described below.

Figure 9 shows the overall logical architecture of the healthcare administration system 2a. Web forms (or pages) are managed by an application service provider (ASP) 100 of the software product and displayed on the PDA 8. The ASP 100 is wirelessly interfaced to the web server 14 which, in turn, is interfaced to the database 12. The web server 14 includes a visual basic VB.NET server component 101 and a data access component 103 which are interfaced together. The VB.NET server component 101 interfaces with the ASP 100 and the data access component 103 interfaces with the database 12.

Figure 10 shows the web form architecture generated by the ASP 100 for a carer (staff member) log on. Initially, the ASP 100 prompts the staff member to log on at 108, by entering a personal identification number (PIN) into the PDA 8 to thereby validate that they are entitled to access resident information stored in the database 12.

At 110, the ASP 100 prompts the carer to select the facility in which a particular resident resides, once the carer's identification has been validated.

At 112, the ASP 100 generates a main menu which is displayed on the PDA 8. The ASP 100 is configured so that the main menu displays menu options available to a carer. The menu options include a residents option 114, a "to do" list option 116, an email option 118, and an asset and maintenance option 120.

Figure 11 shows the web form architecture generated by the ASP 100 for the residents option 114 in the main menu 112. The ASP 100 is configured to permit selection of this option to enable a carer to access a resident details sub-menu 122. The resident details sub-menu 122 includes a care interventions sub-menu 124a which, in turn, includes a care intervention details sub-menu 124b which, in turn, includes a care plan details sub-menu 124c and a note details sub-menu 124d. The resident details sub-menu 122 also includes a notes sub-menu 126a which, in turn, includes a note details sub-menu 126b. In addition, the resident details sub-menu 122 includes a

care plans sub-menu 128a which, in turn, includes a care plan details sub-menu 128b. The resident details sub-menu 122 also includes a hotkeys sub-menu 130a which, in turn, includes a care plan details sub-menu 130b. In addition, the resident details sub-menu 122 includes a quick reports sub-menu 132a which, in turn, includes care plan details sub-menus 132b and 132c. The resident details sub-menu 122 also includes a data collection sheets sub-menu 134a which, in turn, includes a care plan details sub-menu 134b.

Figure 12 shows the web form architecture generated by the ASP 100 for the "to do" list option 116 in the main menu 112. The "to do" list option 116 has a care intervention groups sub-menu 136 which lists the available care intervention groups. The care intervention groups sub-menu 136 has a care interventions list sub-menu 138 which lists any available care interventions. The care intervention list sub-menu 138 has a care intervention details sub-menu 140 which lists the details of each care intervention. The care intervention details sub-menu 140 has two sub-menus, being a care intervention notes sub-menu 142 and a care plans sub-menu 144.

Figure 13 shows the web form architecture generated by the ASP 100 for an administrator. An administrator log on menu 146 is provided. The administrator log on menu 146 has a main administration sub-menu 148. The main administration sub-menu 148 has a care intervention groups sub-menu 150, a care intervention management sub-menu 152, a staff log on sub-menu 154, and an email sub-menu 156. The care intervention groups sub-menu 150 has a care intervention group details sub-menu 158. The care intervention management sub-menu 152 has a care intervention details sub-menu 160. The care intervention details sub-menu 160 has a care plan sub-menu 162 and a note sub-menu 164. The staff log on sub-menu 154 has a further staff log on sub-menu 156.

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Figure 14 is a block diagram showing the logical design for a care intervention process generated by the ASP 100.

Initially, the care intervention process is created at step 166 and a "request" status code (RQ) is generated by the ASP 100.

5 If the process is cancelled, the ASP 100 generates a "cancelled" status code (CN) at step 168. Accordingly, the process is then finished at step 171.

If the process is assigned to a carer, the ASP 100 generates an "assignment" status code (IS) representing an assignment to a carer at step 170 and the process proceeds to query step 172.

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At query step 172, the ASP 100 queries whether the care intervention is complete.

15 If the carer responds that the care intervention is complete at step 172, the ASP 100 generates a "completed" status code (CO) and the care intervention is recorded as complete at step 174. Subsequently, the care intervention is automatically closed and the ASP 100 generates a "fully completed" status code (CC) at step 176. The process is thereby recorded as finished at step 171.

20

If the carer responds that the care invention is not complete at 172, the ASP 100 generates an "incomplete" status code (IN) at step 178. The ASP 100 provides the supervisor with the discretion to reassign the care intervention to another staff member (i.e. carer). Alternatively, the ASP 100 generates an  
25 "incomplete and closed" status code (IC) at step 180 whereby the care intervention is recorded as incomplete and is closed by the supervisor. The process then finishes at step 171.

30 The physical design of the healthcare administration system 2a is described below.

The physical design is described with reference to pseudo-code set out below which illustrates the data model for creating various tables in a relational database for the healthcare administration system 2a.

The following is pseudo-code of the software product for creating a care intervention table. The care intervention table stores data relating to all the care interventions generated by the software product.

```

5  CREATE TABLE [CareIntervention] (
      [CIID] [int] IDENTITY (1, 1) NOT NULL ,
      [CIStatusCode] [varchar] (50) COLLATE SQL_Latin1_General_CP850_CI_AS
10  NOT NULL ,
      [LogFileID] [int] NULL ,
      [AssignTo] [int] NULL ,
      [ResidentIntervention] [int] NOT NULL ,
      [ScheduledDate] [smalldatetime] NULL ,
      [ScheduledTime] [varchar] (5) COLLATE
15  SQL_Latin1_General_CP850_CI_AS NULL ,
      CONSTRAINT [PK_PDACI] PRIMARY KEY CLUSTERED
      (
          [CIID]
      ) ON [PRIMARY] ,
20  CONSTRAINT [FK_CareIntervention_CIGroup] FOREIGN KEY
      (
          [AssignTo]
      ) REFERENCES [CIGroup] (
          [CIGroupID]
25  ) NOT FOR REPLICATION ,
      CONSTRAINT [FK_PDACI_PDACIStatus] FOREIGN KEY
      (
          [CIStatusCode]
      ) REFERENCES [CIStatus] (
30  [CIStatusCode]
      ),
      CONSTRAINT [FK_PDACI_ResidentIntervention] FOREIGN KEY
      (
          [ResidentIntervention]
35  ) REFERENCES [ResidentIntervention] (
          [ResidentIntervention]
      )
      ) ON [PRIMARY]

```

GO

The following is pseudo-code of the software product for creating a care intervention group table. Care intervention data can be assigned to care intervention groups according to health care facilities at which the care interventions are carried out.

```
CREATE TABLE [CIGroup] (  
    [CIGroupID] [int] IDENTITY (1, 1) NOT NULL ,  
10    [Description] [varchar] (30) COLLATE SQL_Latin1_General_CP850_CI_AS  
    NOT NULL ,  
    [DefaultGroup] [tinyint] NULL ,  
    [Disabled] [tinyint] NULL ,  
    CONSTRAINT [PK_CIGroup] PRIMARY KEY CLUSTERED  
15    (  
        [CIGroupID]  
    ) ON [PRIMARY]  
    ) ON [PRIMARY]  
GO
```

20

The following is pseudo-code of the software product for creating a care intervention group facility table. This table maintains data relating to all facilities linked to the particular intervention groups. Care interventions conducted in common facilities can be assigned to particular groups.

25

```
CREATE TABLE [CIGroupFacility] (  
    [CIGroupFacilityID] [int] IDENTITY (1, 1) NOT NULL ,  
    [CIGroupID] [int] NOT NULL ,  
    [Location] [tinyint] NOT NULL ,  
30    [Facility] [tinyint] NOT NULL ,  
    CONSTRAINT [PK_CIGroupFacility] PRIMARY KEY CLUSTERED  
    (  
        [CIGroupFacilityID]  
    ) ON [PRIMARY] ,  
35    CONSTRAINT [FK_CIGroupFacility_CIGroup] FOREIGN KEY  
    (  
        [CIGroupID]  
    ) ON [PRIMARY] REFERENCES [CIGroup] ([CIGroupID]) ON [PRIMARY]
```

```

        [CIGroupID]
    ) REFERENCES [CIGroup] (
        [CIGroupID]
    ) NOT FOR REPLICATION ,
5   CONSTRAINT [FK_CIGroupFacility_Facility] FOREIGN KEY
    (
        [Location],
        [Facility]
    ) REFERENCES [Facility] (
10      [Location],
        [Facility]
    ) NOT FOR REPLICATION ,
    CONSTRAINT [FK_CIGroupFacility_Location] FOREIGN KEY
    (
15      [Location]
    ) REFERENCES [Location] (
        [Location]
    ) NOT FOR REPLICATION
    ) ON [PRIMARY]
20 GO

```

The following is pseudo-code of the software product for creating a care intervention note table. This table relates notes and their respective corresponding care interventions.

```

25
CREATE TABLE [CINote] (
    [CINoteID] [int] IDENTITY (1, 1) NOT NULL ,
    [Resident] [int] NOT NULL ,
    [ResidentNoteAC] [varchar] (3) COLLATE
30  SQL_Latin1_General_CP850_CI_AS NOT NULL ,
    [ResidentNoteID] [int] NOT NULL ,
    [ResidentIntervention] [int] NULL ,
    CONSTRAINT [PK_PDACINote] PRIMARY KEY CLUSTERED
    (
35      [CINoteID]
    ) ON [PRIMARY] ,
    CONSTRAINT [FK_PDACINote_Resident] FOREIGN KEY
    (

```

```

        [Resident]
    ) REFERENCES [Resident] (
        [Resident]
    ),
5   CONSTRAINT [FK_PDACINote_ResidentIntervention] FOREIGN KEY
    (
        [ResidentIntervention]
    ) REFERENCES [ResidentIntervention] (
        [ResidentIntervention]
10  )
    ) ON [PRIMARY]
GO

```

The following is pseudo-code of the software product for creating a care  
 15 intervention status table. The status codes used for the care intervention  
 process shown in Figure 14 are stored in this table.

```

CREATE TABLE [CIStatus] (
    [CIStatusCode] [varchar] (50) COLLATE SQL_Latin1_General_CP850_CI_AS
    NOT NULL ,
20  [CIStatusDesc] [varchar] (30) COLLATE SQL_Latin1_General_CP850_CI_AS
    NULL ,
    CONSTRAINT [PK_PDACIStatus] PRIMARY KEY CLUSTERED
    (
        [CIStatusCode]
25  ) ON [PRIMARY]
    ) ON [PRIMARY]
GO

```

The following is pseudo-code of the software product for creating a care  
 30 intervention log file table. Data relating to event logs generated by the  
 software product is stored in this table.

```

CREATE TABLE [LogFile] (
    [LogFileID] [int] IDENTITY (1, 1) NOT NULL ,
35  [LinkID] [int] NULL ,
    [LinkTable] [varchar] (40) COLLATE SQL_Latin1_General_CP850_CI_AS
    NULL ,

```

```

        [StatusCode] [varchar] (4) COLLATE SQL_Latin1_General_CP850_CI_AS
NULL,
        [LogText] [varchar] (100) COLLATE SQL_Latin1_General_CP850_CI_AS
NULL,
5      [LogDateTime] [datetime] NOT NULL CONSTRAINT
[DF__LogFile__LogDate__55ADD80B] DEFAULT (getdate()),
        [CreatedBy] [int] NULL,
        CONSTRAINT [PK_PDACILog] PRIMARY KEY CLUSTERED
(
10      [LogFileID]
) ON [PRIMARY],
        CONSTRAINT [FK_PDACILog_Users] FOREIGN KEY
(
        [CreatedBy]
15      ) REFERENCES [Users] (
        [UserId]
)
) ON [PRIMARY]
GO

```

20

Figure 15 illustrates the relational database generated by the software product, and shows data flow between various tables including those generated by the software product as illustrated above. The relational database includes a care intervention table 182, a care intervention group table 184, a care intervention group facility table 186, a care intervention note table 188, a care intervention status table 190, a log file table 192, a resident intervention table 194, a location table 196, a facility table 198, a users table 200 and a resident table 202.

30 The software product associates data in the care intervention table 182 with data in the resident intervention table 194, the care invention group table 184, and the care intervention status table 190.

The software product associates data in the care intervention table 182 and  
 35 the care intervention group facility 186 with data in the care intervention group table 184.

The software product associates data in the care intervention group facility table 186 with data in the care intervention group table 184 and the facility table 198.

5

The software product associates data in the care intervention note table 188 with data in the resident table 202 and the resident intervention table 194.

10 The software product associates data in the care intervention table 182 with data in the care intervention status table 190.

The software product associates data in the log file table 192 with data in the user table 200.

15 The software product associates data in the care intervention table 182 and care intervention note table 188 with data in the resident information table 194. The software product also associates data in the resident information table 194 with data in the resident table 202.

20 The software product associates data in the care intervention group facility table 186 and the facility table 198 with data in the location table 196.

The software product associates data in the care intervention group facility table 186 and the resident table 202 with data in the facility table 198.

25

The software product associates data in the log file table 192 with data in the user's table 200.

30 The software product associates data in the resident intervention table 194 and care intervention note table 188 with data in the resident table 202. The software product also associates data in the resident table 202 with data in the facility table 198.

Thus, the software product is configured to generate a large number of different reports from the relational database shown in Figure 15.

- 5 A possible list of SQL storage procedure commands for the tables are shown below. The software product is configured to generate the reports shown in the second column upon entry of corresponding SQL commands in the first column.

spdCIGroup	Delete a C.I. Group
spdCIGroupFacility	Remove a facility from a C.I. Group
spdEmailItem	Delete a Email
spgAllUsers	Get all users
spgBehaviourLog	Get behaviour logs
spgCarePlan	Get care plan details
spgCIDetails	Get care intervention details
spgCIGroup	Get C.I. Groups
spgCIGroupByUser	Get C.I. Groups by assigned facilities of the user
spgCIGroupFacility	Get facilities of the C.I. Group
spgCIHotKeys	Get hot Keys information
spgCINotes	Get Notes list
spgCIs	Get care intervention list
spgDataCollectionDetails	Get details of the specified clinical data collection sheet
spgDataCollections	Get a list of all clinical data collection sheets
spgDCEmotionalNeedDetail	Get details of Emotional Needs in Data collection sheet
spgEmailAddress	Get Email address
spgEmailGroup	Get Email Groups
spgEmailGroupUser	Get all users of email group
spgEmailItems	Get email items
spgEmailMsg	Get the message body of a email
spgFacility	Get all facilities
spgIncidentInterventions	Get Incident Interventions
spgIncidentManagement	Get Incident Management Info

spgIncidentTypes	Get Incident Types
spgLocation	Get locations
spgLocationFacility	Get Locations and facilities
spgLogFile	Get Logs
spgResCarePlans	Get a list of resident care plans
spgResDetails	Get resident details
spgResHotKeys	Get a list of resident hot keys
spgResList	Get a resident list
spgResNoteDetails	Get details of resident note
spgResNotes	Get a list of resident notes
spgResQuickReport	Get quick report for resident
spgSystemLogin	Verify user logon
spiCIGroup	Insert a new C.I. Group record
spiCIGroupFacility	Insert a new facility to C.I. Group
spiCINote	Insert a new note
spiDCAnticoagulant	Insert a new anticoagulant to data collection sheet
spiDCAnticoagulantDetail	Insert details of new anticoagulant to data collection sheet
spiDCBowel	Insert a new bowel record
spiDCBowelDetail	Insert details of bowel record
spiDCDiabetic	Insert a new diabetic record
spiDCDiabeticDetail	Insert details of diabetic record
spiDCEmotionalNeed	Insert new emotional record
spiDCEmotionalNeedDetail	Insert details of emotional need
spiDCFluidBalance	Insert fluid balance record
spiDCMajorWound	Insert major wound record
spiDCMajorWoundDetail	Insert details of major wound
spiDCRoutine	Insert a routine record
spiDCRoutineDetail	Insert details of a routine
spiDCSyringeDriver	Insert new syringe driver record
spiDCSyringeDriverDetail	Insert details of syringe driver record
spiDCTimeVolume	Insert new time volume record

spiDCWhereabout	Insert new whereabouts record
spiDCWhereaboutDetail	Insert details of new whereabouts record
spiEmailItem	Insert a new email
spiLogFile	Insert into Log file
spiNote	Insert a new note
spiNoteIntervention	Insert Intervention info to a note
spiNoteManagement	Insert Management info to a note
sppCIGenerator	For Generating care interventions
spuCIStatus	Update C.I. status
spuDCAnticoagulantDetail	Update details of an anti-coagulant
spuDCBowelDetail	Update bowel details
spuDCDiabeticDetail	Update diabetic details
spuDCEmotionalNeedDetail	Update emotional need details
spuDCFluidBalance	Update fluid balance records
spuDCFluidBalanceDetail	Update details of fluid balance record
spuDCMajorWound	Update major wound detail
spuDCRoutineDetail	Update routine record
spuDCSyringeDriverDetail	Update syringe driver details
spuDCTimeVolume	Update time volume record
spuDCTimeVolumeDetail	Update time volume details
spuDCWhereaboutDetail	Update whereabouts details
spuEmailRestore	Restore a deleted email
spuNote	Update an incomplete note

A web interface generated by the software product is described below.

Figure 16 is a block diagram showing the web form (i.e. page) relationships generated by the software product for a PDA (mobile system) logon. A home page 204 is generated which redirects to a log in page 206. System administrators and supervisors are able to access the log in page 206. Normal staff members (i.e. carers) are also able to access the log in page 206 via a PDA 8. Administrators and supervisors are able to access an administrator/supervisor menu page 208. Carers are able to access a main

menu page 210. Administrators and supervisors are also able to access the main menu page 210.

- Figure 17 shows the web form relationships generated by the software product for logging on as a staff member. A note detail page 212 is generated. A main menu page 214 is generated under the note detail page 212. Navigation is facilitated between the main menu page 214 and a residents page 216, a "to do" list page 218 and an email page 220.
- Navigation is facilitated between the residents page 216 and a resident details page 222. Navigation is facilitated between the resident details page 222 and: a data collection sheet page 224, a resident notes page 226, a care plans page 228, a hotkeys page 230 and a quick report page 232. Navigation is facilitated between the data collection sheets page 224 and a clinical data collection sheets page 234. Navigation is facilitated between the resident notes page 226 and: a note details page 236 and a new note page 238. Navigation is facilitated between the note details page 236 and an edit note page 240. Navigation is facilitated between the care plans page 228 and a care plan page 242. Navigation is facilitated between the hotkeys page 230 and a care plan page 244. Navigation is facilitated between the quick report page 232 and: a note details page 246 and a care plan page 248. Navigation is facilitated between the note details page 246 and an edit note page 250.
- Navigation is facilitated between the "to do" list page 218 and a care intervention details page 252. Navigation is facilitated between the care intervention details page 252 and: a note details page 254, a new note page 256 and a care plan page 258. Navigation is facilitated between the note details page 254 and an edit note page 260.
- Navigation is facilitated between the email page 220 and: a new email page 222 and an email message page 224.

Figure 18 shows the web form relationships generated by the software product for logging on as an administrator. An administrator/supervisor menu

page is provided at 326. Navigation is facilitated between the administrator/supervisor menu page 326 and: a care intervention group setup page 328, a care intervention management page 330, a staff log on page 332 and an email page 334. The carer is able to navigate from the staff log on page 332 to a main menu page 336 and, in turn, return to the administrator/supervisor menu 326.

Navigation is facilitated between the care intervention management page 330 and a care intervention details page 338. Navigation is facilitated between the care intervention details page 338 and: an "assign to staff" page 340, a note details page 342, a "new note" page 344, and a care plan page 346. Navigation is facilitated between the note details page 342 and an edit note page 348.

A carer is able to navigate from the email page 334 to: a new email page 348 and an email message page 350.

Figure 19 shows a range of care plan web pages generated by the software product.

20

Figure 20 shows a range of clinical data collection web pages generated by the software product.

In view of the foregoing, a person skilled in the art will appreciate that the present invention provides a method of administering a healthcare administration system 2. The method includes the steps of maintaining a database in which resident information is stored, establishing a wireless communication protocol between the database and the PDA 8, and generating an interface on the PDA 8 so that the PDA 8 can interface with the database.

30

The present invention enables resident information to be stored in a single centrally located database. The present invention also enables carers, such

as doctors and nurses, to interface with the database when they are not located in close proximity to either the database or the resident.

5 Some embodiments of the present invention provide a means for enabling a carer to view and modify resident information as he or she wanders around a care-facility in which the resident resides.

10 Other embodiments provide a means for enabling a carer to view and modify resident information from a remote location. That is, the carer can view and modify resident information via the Internet as he or she wanders around his or her home or the home of the resident or patient. It follows that a particular advantage of this invention is that it greatly facilitates home care. This can substantially cut medical costs, a large proportion of which are associated with lodging of aged care residents.

15 A person skilled in the art will also appreciate that many embodiments and variations can be made without departing from the ambit of the present invention.

20 In the first and second embodiments described, a PDA was used for wirelessly communicating with the network 6. Alternatively, other types of wireless communication device could be used such as, for example, a keyboard enhanced PDA.

25 In compliance with the statute, the invention has been described in language more or less specific to structural or methodical features. It is to be understood that the invention is not limited to specific features shown or described since the means herein described comprises preferred forms of putting the invention into effect.

**CLAIMS**

1. A healthcare administration system that includes  
a computer programmed to define a database for storing patient information and connected to a network at a central location; and  
at least one wireless communication device connected to the network at an end user location, the, or each, wireless communication device being configured to define an interface with the database, via the network.
2. A healthcare administration system as claimed in claim 1, in which the computer includes a database server for storing and managing the database and a web server for interfacing the database with the network.
3. A healthcare administration system as claimed in claim 2, in which the network is a Wireless Fidelity (WIFI) intranet through which the, or each, wireless communication device interfaces with the web server.
4. A healthcare administration system as claimed in claim 1, in which the, or each, wireless communication device is a personal digital assistant (PDA).
5. A healthcare administration system as claimed in claim 2, in which the system includes at least one workstation computer at the end user location that interfaces with the web server via one of a local area network (LAN) and the Internet.
6. A healthcare administration system as claimed in claim 1, in which said interface defined by the wireless communication device is in the form of a virtual private network (VPN).
7. A method of administering a healthcare system, the method including the steps of:  
inputting data representing patient information into a database;  
manipulating the patient information to generate patient profiles;

establishing a wireless communication protocol between the database and a wireless communication device; and

generating an interface on the wireless communication device so that the wireless communication device can interface with the database.

8. A method as claimed in claim 7, in which the step of maintaining the database includes the step of generating patient profiles within the database.

9. A method as claimed in claim 8, which includes the step of generating electronic care plans (ECP's) using the patient profile.

10. A method as claimed in claim 9, which includes the step of providing a notes interface so that a carer can enter further patient information into the database to be accessible via the interface.

11. A method as claimed in claim 9, which includes the step of generating care interventions based on the ECP's.

12. A method as claimed in claim 7, which includes the step of generating reports from data stored in the database.

13. A software product for use in a healthcare administration system, the software product being executable on a computer and being configured so that, when executed, the software product is capable of carrying out the method as claimed in any one of claims 7 to 12.

14. A software product for use in a healthcare administration system, the software product being executable on a computer and being configured so that, when executed, the software product is capable of carrying out the following steps:

providing a database in which patient information can be stored;

manipulating patient information to generate patient profiles;

establishing a wireless communication protocol between the database and a wireless communication device; and

generating an interface on the wireless communication device so that the wireless communication device can interface with the database.

15. A software product as claimed in claim 14, which is configured to define an application service provider (ASP) to manage web forms to be displayed on the wireless communication device.

16. A software product as claimed in claim 15, in which the ASP is configured to generate web form architecture to permit a carer to log in to the healthcare administration system.

17. A software product as claimed in claim 16, in which the ASP is configured to generate the web form architecture such that the PDA carries out one or more of the following steps: prompts a carer to enter data representing a facility in which a patient resides; generates menu options to facilitate access to patient information and to facilitate the input of data, such as note data to the database.

18. A software product as claimed in claim 16, in which the ASP is configured to generate the web form architecture such that the PDA can carry out one or more of the following steps: provides a log on menu for an administrator; generates menu options to facilitate access to information including care interventions.

19. A software product as claimed in claim 16, in which the ASP is configured to generate the web form architecture to define a care intervention.

20. A software product as claimed in claim 19, in which the ASP is configured to generate the web form architecture such that the PDA can communicate the assignment of the care intervention to a carer.

21. A software product as claimed in claim 20, in which the ASP is configured to generate the web form architecture such that the PDA can

prompt a carer to input data indicating whether or not the care intervention is complete.

22. A software product as claimed in claim 14, which is configured to provide a relational database.

23. A software product as claimed in claim 22, which is configured to generate a care intervention table of the relational database such that the care intervention table stores data relating to care interventions generated by the software product.

24. A software product as claimed in claim 23, which is configured to generate a care intervention groups table of the relational database such that the care intervention groups table stores data relating to care interventions associated with particular facilities at which the care interventions are carried out.

25. A software product as claimed in claim 24, which is configured to generate a care intervention group facility table such that the care intervention group facility table stores data relating to all facilities linked to particular intervention groups.

26. A software product as claimed in claim 23, which is configured to generate a care intervention note table, such that the care intervention note table relates notes and corresponding care interventions.

27. A software product as claimed in claim 23, which is configured to generate a care intervention status table, such that the care intervention status table stores status codes used for respective care interventions.

28. A software product for use in a healthcare administration system, the software product being executable on a personal digital assistant (PDA) and being configured so that, when executed, establishes an interface with the software product of any one of claims 13 to 28.

29. A software product as claimed in claim 28, which is configured so that the PDA can generate a graphic user interface (GUI) to permit a carer to interface with the software product of any one of claims 13 to 28.

30. A software product as claimed in claim 28, which is configured so that the PDA can generate a decision tree to permit a carer to input data representing whether or not one or more of the following steps have been carried out by the carer: a particular care intervention has been completed; progress notes are to be input.

31. A software product as claimed in claim 30, which is configured so that the PDA can communicate details relating to said one or more of the steps to the database.

32. A personal digital assistant (PDA) programmed with a software product of any one of claims 28 to 31.

33. A personal digital assistant as claimed in claim 32, which is Internet-enabled.

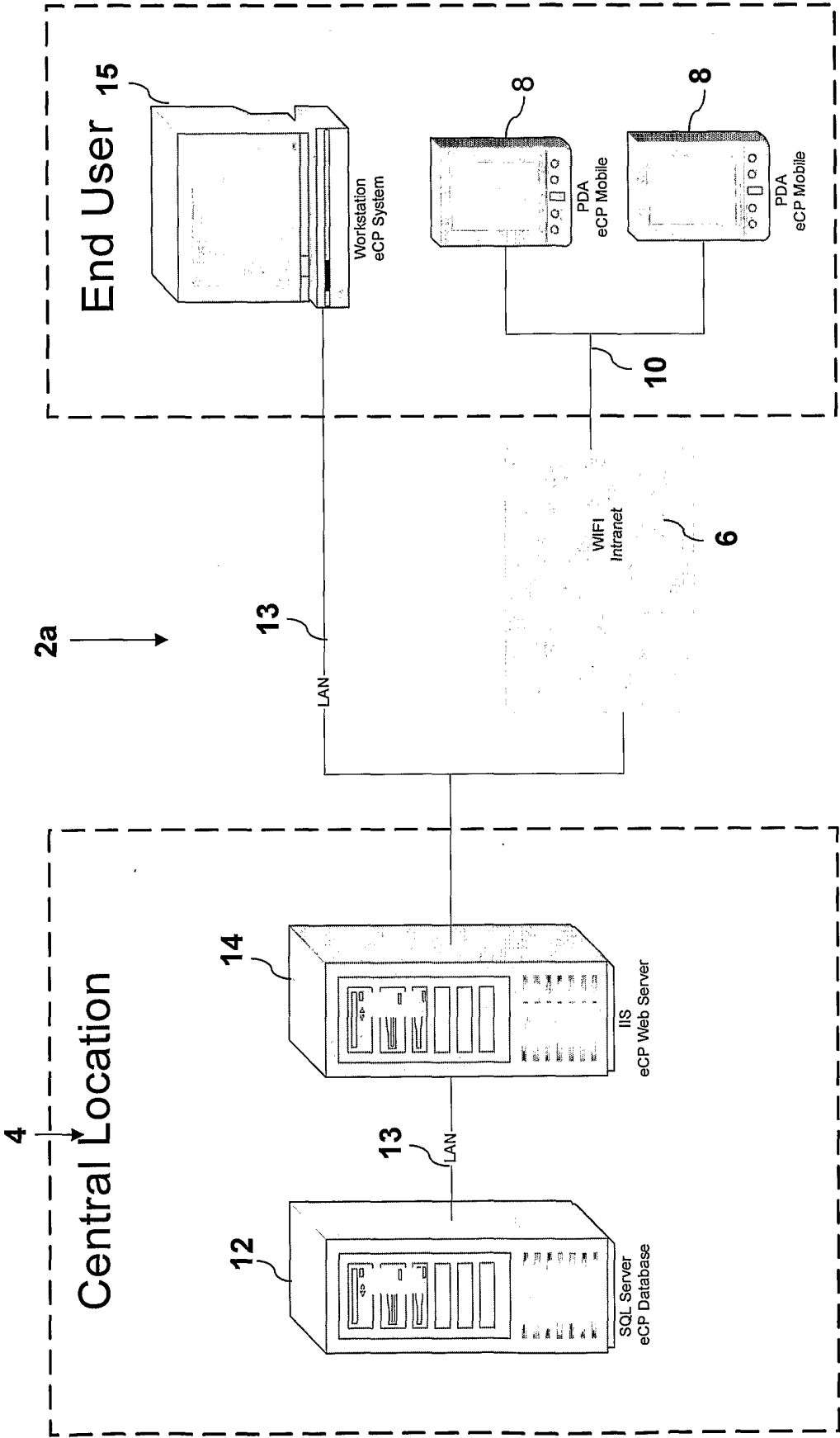


Figure 1

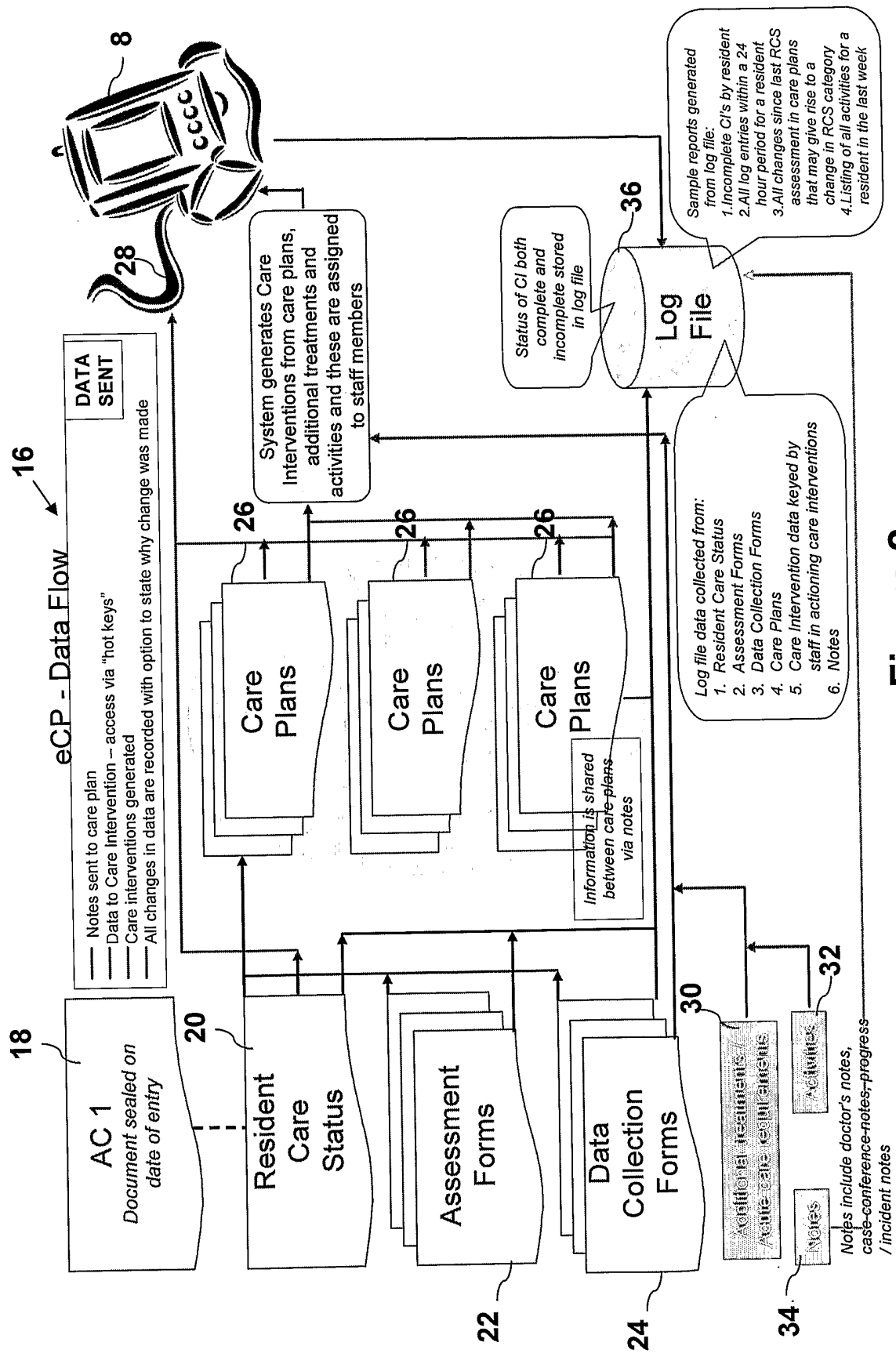


Figure 2

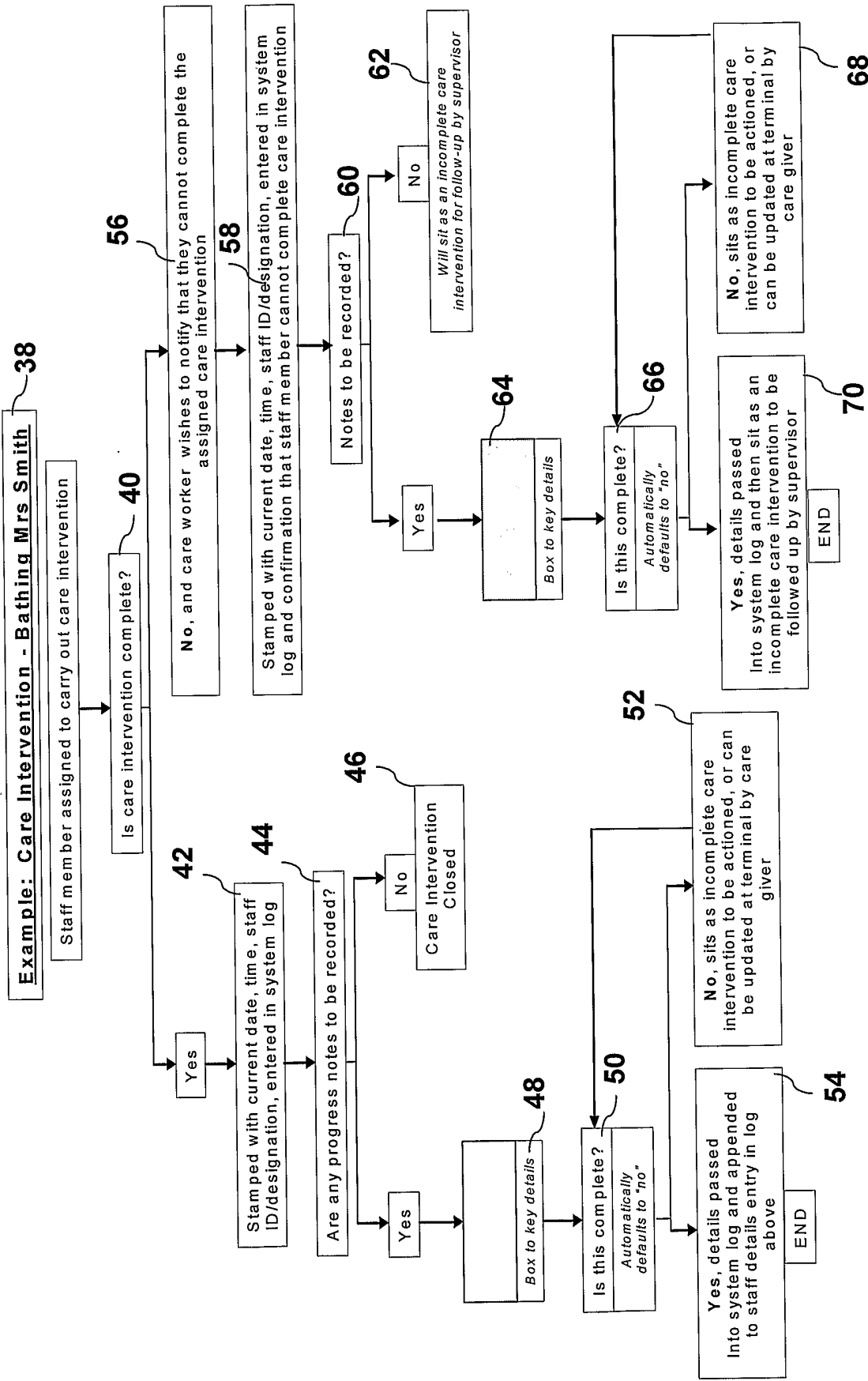


Figure 3

72

76

78

http://acserver02 - Care Intervention Schedule - Microsoft Internet Explorer

Morning Afternoon Night Specify 74

Everyday

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

Sunday

OK Cancel

## Figure 4

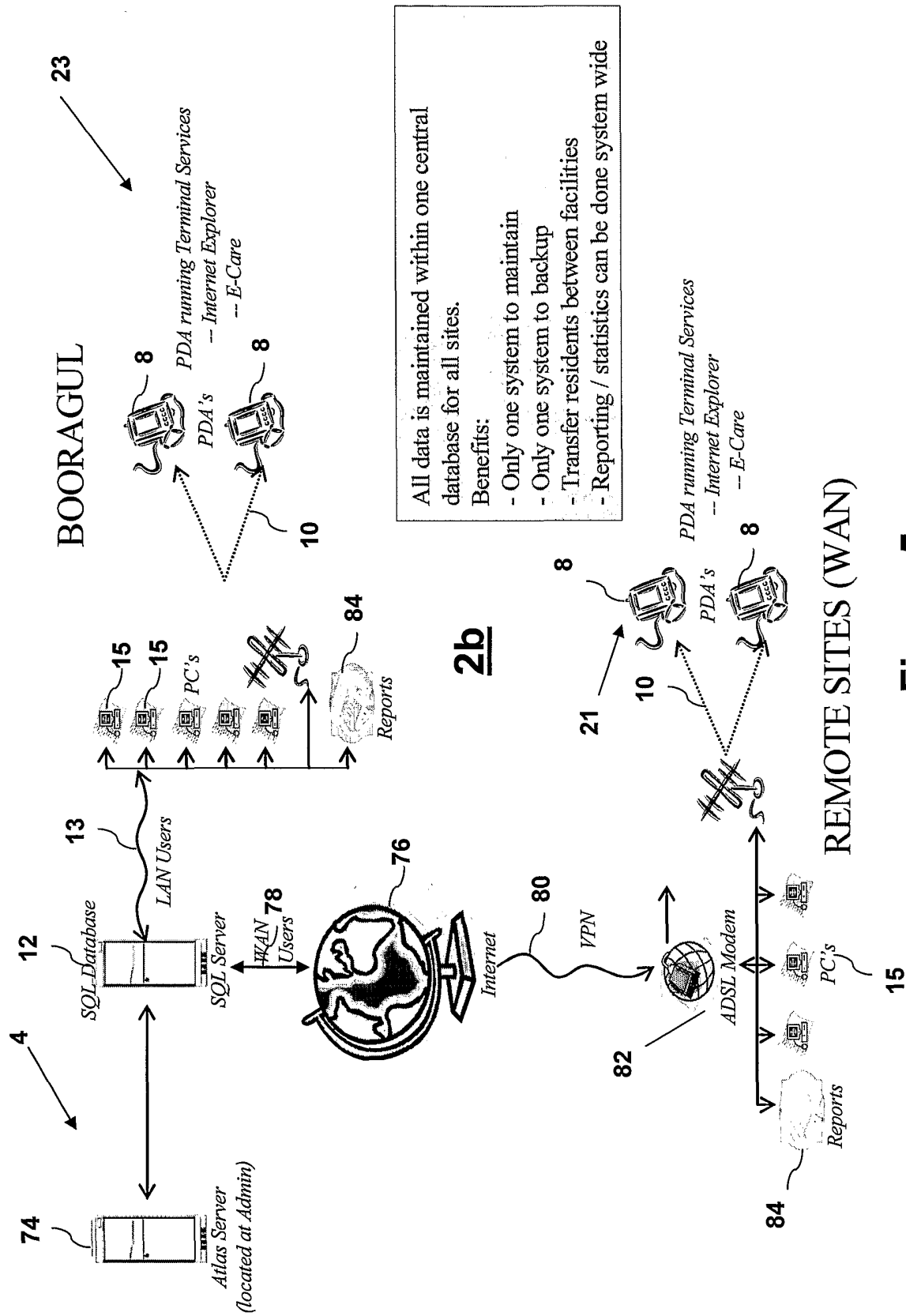


Figure 5

O F1	O F2	O F3	O F4	O F5	O F6
Safety	Behaviour	Care Alert	Communication	Medical Alert	Mobility

Figure 6

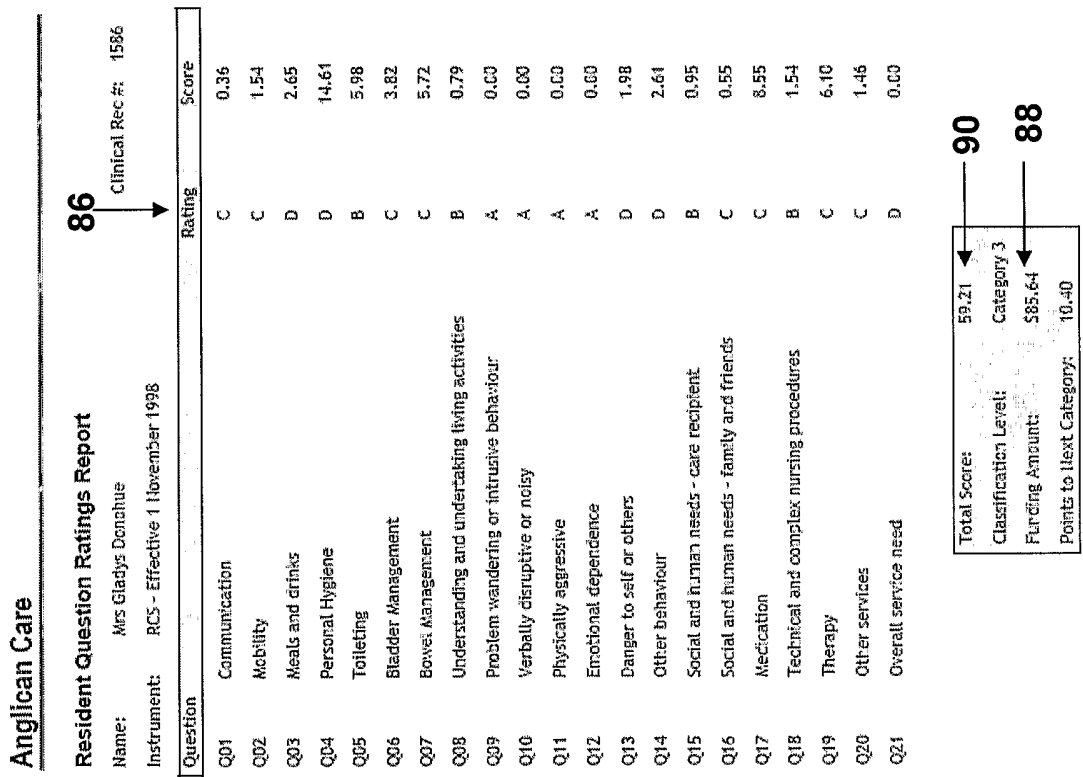


Figure 7

<b>Resident code: STE001</b>		<b>Date: 6 June 2004</b>		<a href="#">Show detail</a>	
<b>eCP – RCS Worksheet Summary</b>					
<b>Resident:</b> John Robert STEVENSON		<b>DOB:</b> 15/03/1925		<b>Current RCS:</b> 6	
<b>Admission date:</b> 1/07/2000		<b>Facility:</b> McIntosh House		<b>Ward:</b> A	
<b>Last assessment date:</b> 1/01/2004		<b>Next RCS due date:</b> 1/01/2005		<b>Room:</b> B	

Q.	Description	Rating	Score
1	Communication	C	0.36
2	Mobility	B	1.19
3	Meals and drinks	B	0.67
4	Personal hygiene	B	5.34
5	Toileting	B	5.90
6	Bladder management	B	2.22
7	Bowel management	B	3.32
8	Understanding and undertaking living activities	A	0.00
9	Problem wandering or intrusive behaviour	B	0.00
10	Verbally disruptive or noisy behaviour	B	1.19
11	Physically aggressive behaviour	B	2.34
12	Emotional dependence	A	0.00
13	Danger to self or others	D	1.96
14	Other behaviour	A	0.00
15	Social and human needs - care recipients	A	0.00
16	Social and human needs - families and friends	A	0.00
17	Medication	B	6.79
18	Technical and complex nursing procedures	B	1.54
19	Therapy	B	3.64
20	Other services	A	0.00
21	Overall service need	E	

<b>Final comments:</b>	<b>RCS Score</b>
	<b>6</b>

**Consultant:** Alex / Rob

**Comment:** Generated by eCP  
**Printer:** Generated by eCP

## Figure 8a

Resident code: STE001	Date: 8 June 2004		Show detail <input type="checkbox"/>
<b>eCP - RCS Worksheet Summary</b>			
Resident: Jshr Robert STEVENSON	DOB: 18/03/1926	Current RCS: 8	
Admission date: 1/07/2003	Facility: McInosh Hostel	Ward: A	Room: B
Last assessment date: 1/01/2004	Next RCS due date: 1/01/2006		
Total Score:		2621	
Classification Level:		Category 3	
Funding Amount:		\$25.04	
Points to Next Category:		10.40	

Figure 8b

Resident code: SFE001

Date: 8 June 2004

Show detail

**aCP – RCS Worksheet**

92

Resident: John Robert STEVENSON

DOB: 15/03/1926

Current RCS: 6

Admission date: 1/07/2000

Facility: McIntosh Hostel

Ward: A

Room: B

Last assessment date: 1/01/2004

Next RCS due date: 1/01/2006

1

Communication

94

Rating	Score	Description
A	0.00	Requires no assistance.
B	0.28	Requires assistance with cleaning and fitting of aids.
C	0.38	Requires additional time listening, speaking slowly and clearly, encourage communication or occasionally using non-verbal cues.
D	0.83	Requires assistance to communicate by translating or interpreting. OR Requires communication by non-verbal means on almost all occasions.
E	n/a	

96

96

Care Plan	Description	Information	Comments	CI Weekly Frequency	RCS R
ADL - Communication / Visual	Interventions	Wash / dry / fit eye glasses		7	B
ADL - Communication / Visual	Interventions	Provide an uncluttered environment for safety		7	A
ADL - Communication / Visual	Visual Aids Required	Glasses - specify type		7	B
ADL - Communication / Visual	Visual Aids Required	Picture book / album		3	D
Comments:		Assessor's rating: E	Score: 10.28		

Comment: Memo field please

Comment: Data field field

Comment: Value generated by S-P

Figure 8c

Resident code: STE001

Date: 8 June 2004

Show detail ☒

eCP – RCS Worksheet

Resident: John Robert STEVENSON

DOB: 15/03/1926

Current RCS: 0

Admission date: 1/07/2000

Facility: McIntosh Hostel

Ward: A

Room: B

Last assessment date: 1/01/2004

Next RCS due date: 1/01/2005

2 Mobility

Rating	Score	Description
A	0.00	Usually independent.
B	1.18	Requires assistance from staff for transfers; OR Needs to be accompanied or supervised when walking.
C	1.54	Requires assistance from staff for transfers; AND Needs to be accompanied or supervised when walking.
D	1.82	Requires major assistance and encouragement from staff in order to maintain mobility. OR Requires lifting equipment for transfers.
E	n/a	

Care Plan	Description	Information	Comments	CI Weekly Frequency	RCS R
ADL - Mobility	Interventions	Supervise at all times when ambulating		7	B'
ADL - Mobility	Interventions	Minimise glare in immediate environment		7	A
ADL - Mobility	Aids Required	Pliva hoist		7	D
ADL - Mobility	Aids Required	Portable Pe Pan		7	B'
Comments:					Score: 1.19
					Assessor's rating: E

Comment: Veno "515" 2322

Comment: Data not used

vs use generated

Figure 8d

Resident code: STE001

Date: 8 June 2004

Show detail ☒

**eCP - RCS Worksheet**

Resident: John Robert STEVENSON

DOB: 15/03/1925

Current RCS: 6

Admission date: 1/07/2000

Facility: McIntosh Hostel

Ward: A

Room: 5

Last assessment date: 1/01/2004

Next RCS due date: 1/01/2006

Final Comments:

Total score14.7

RCS level7

Comment: Memo field passed

Comment: Generated by eCP

Comment: Generated by eCP

Total Score: 53.21

Classification Level: Category 3

Funding Amount: \$55.54

Points to Next Category: 10.40

Figure 8e

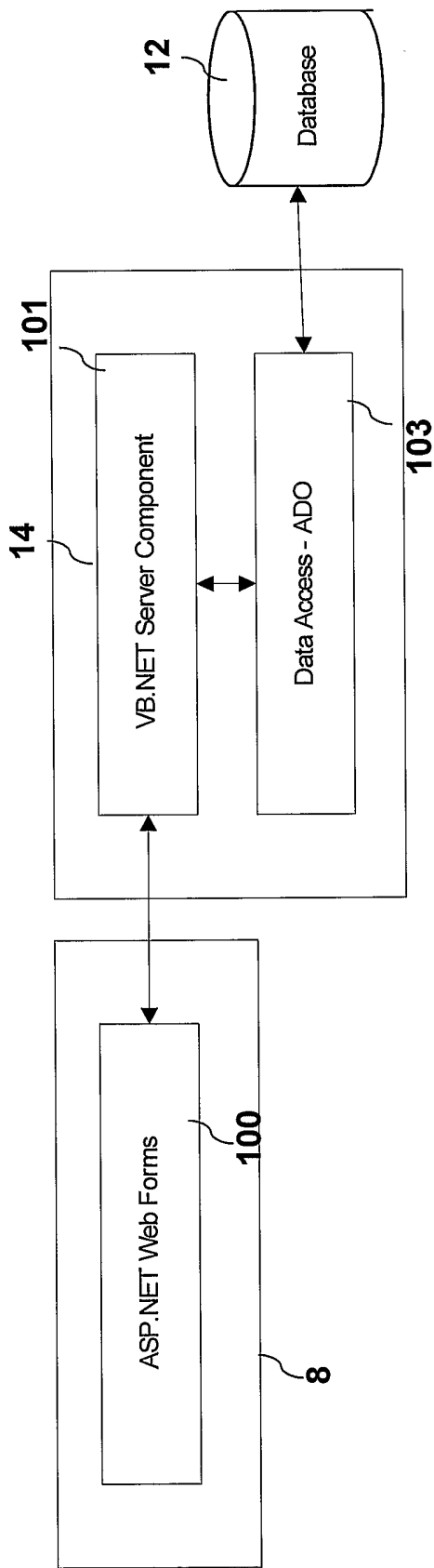


Figure 9

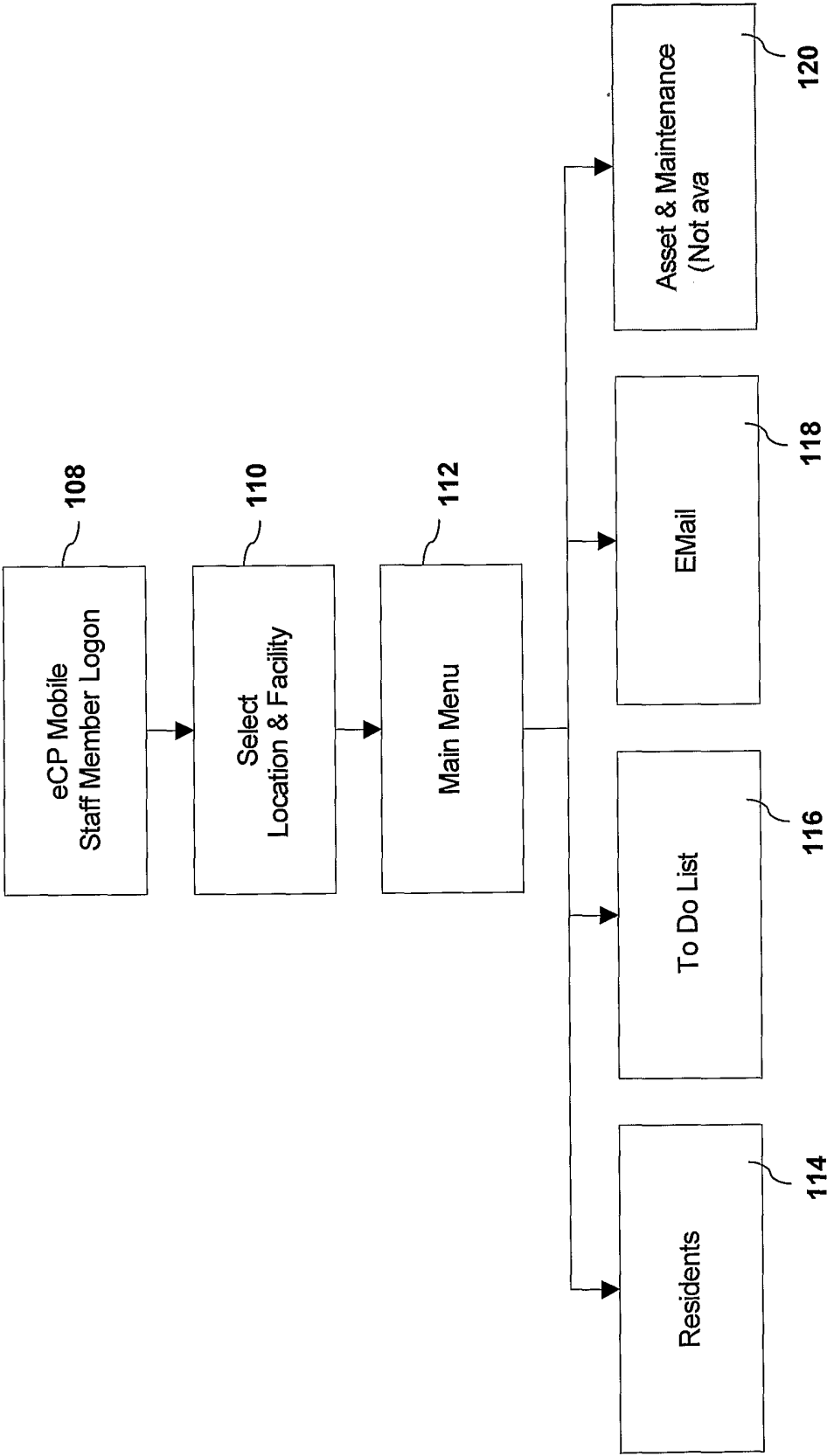


Figure 10

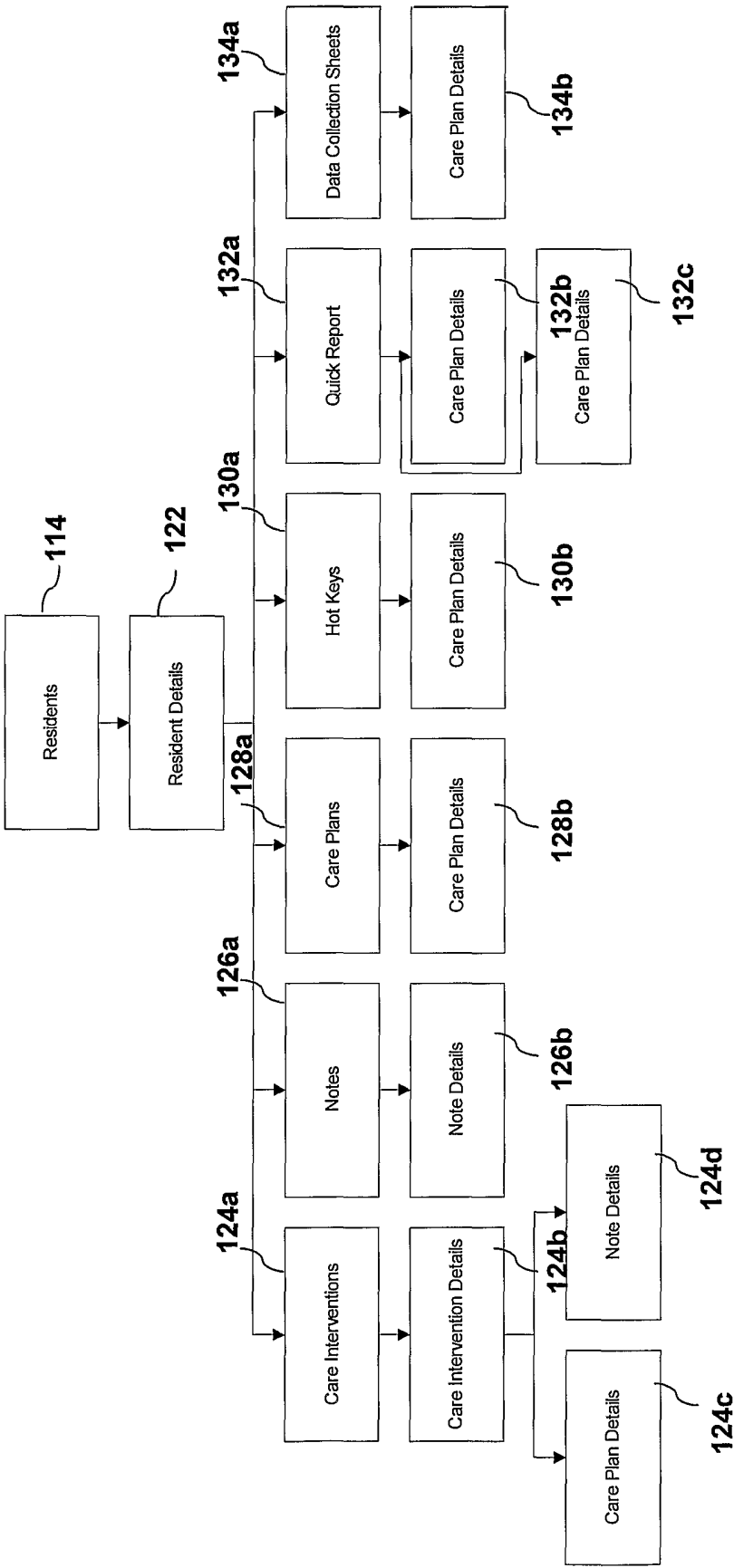


Figure 11

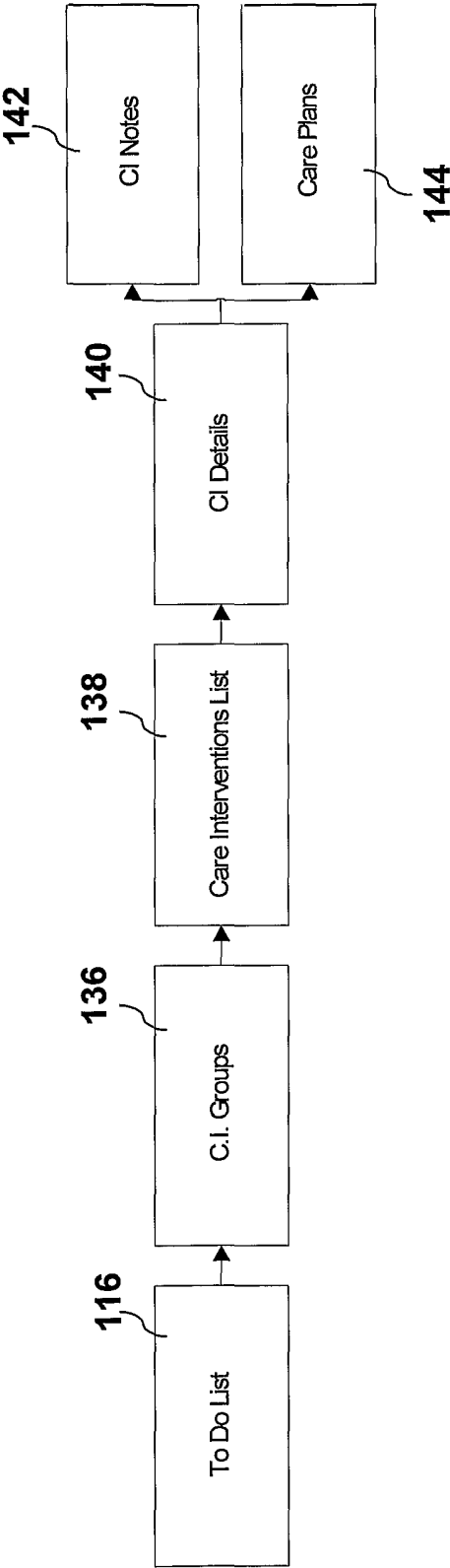


Figure 12

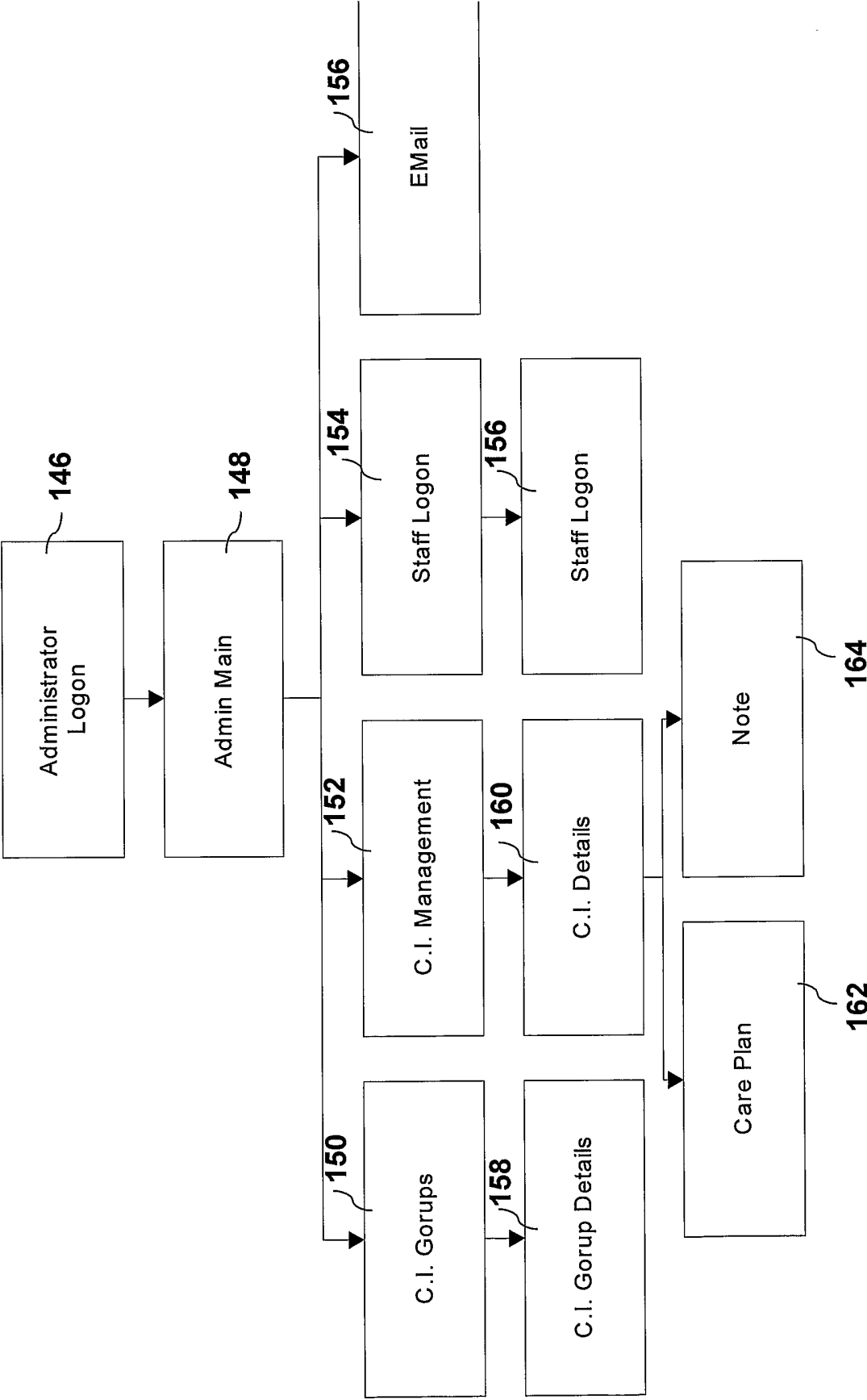


Figure 13

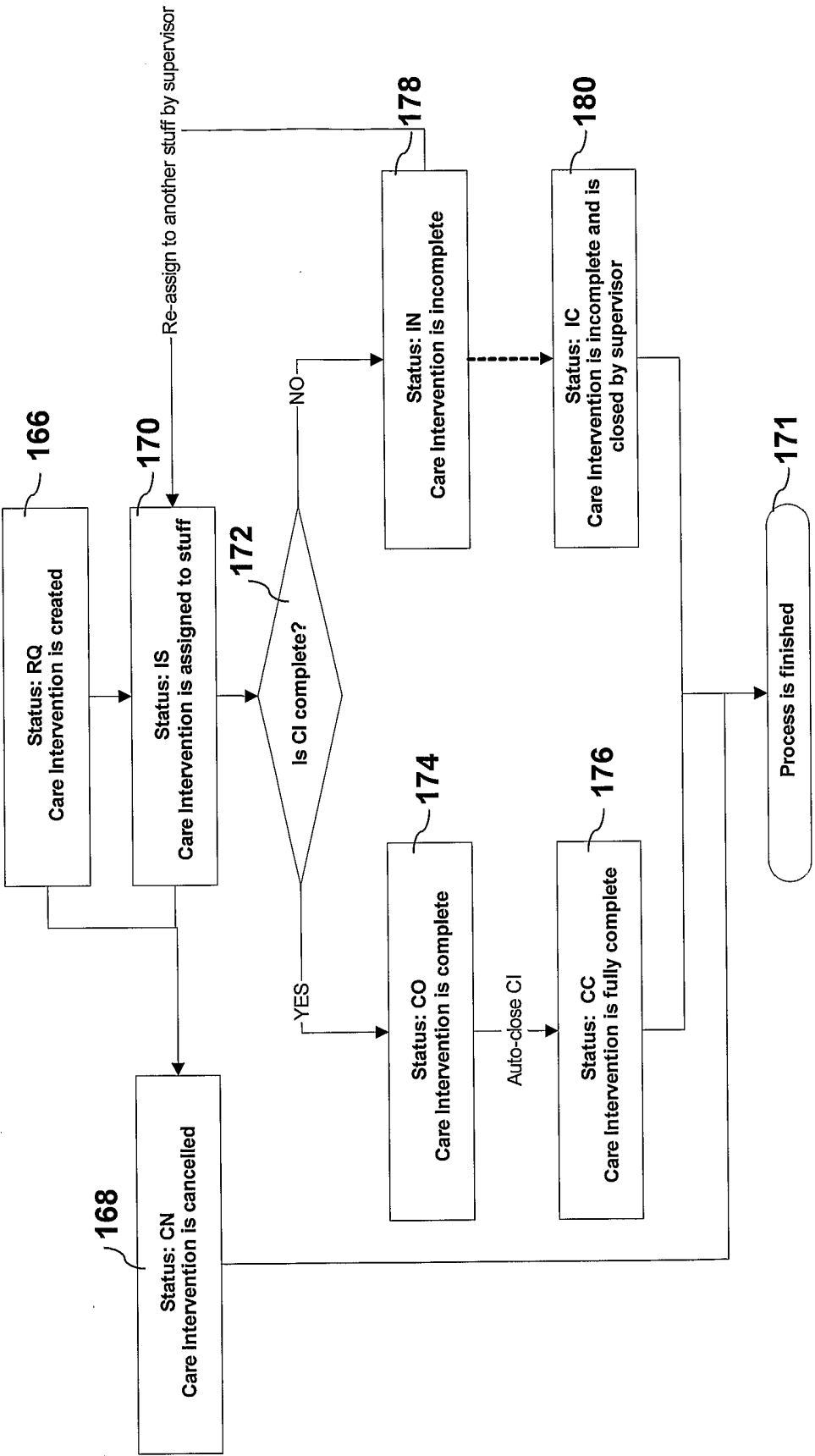


Figure 14

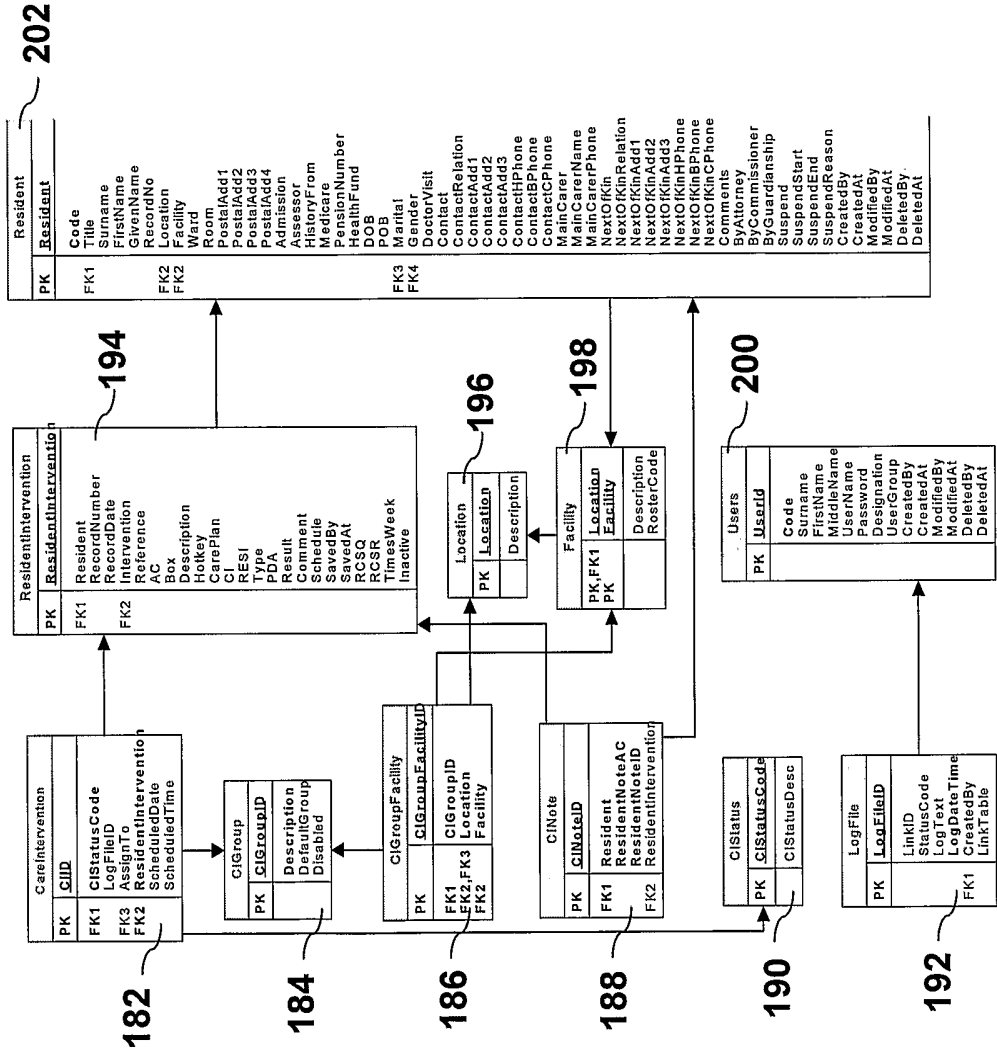


Figure 15

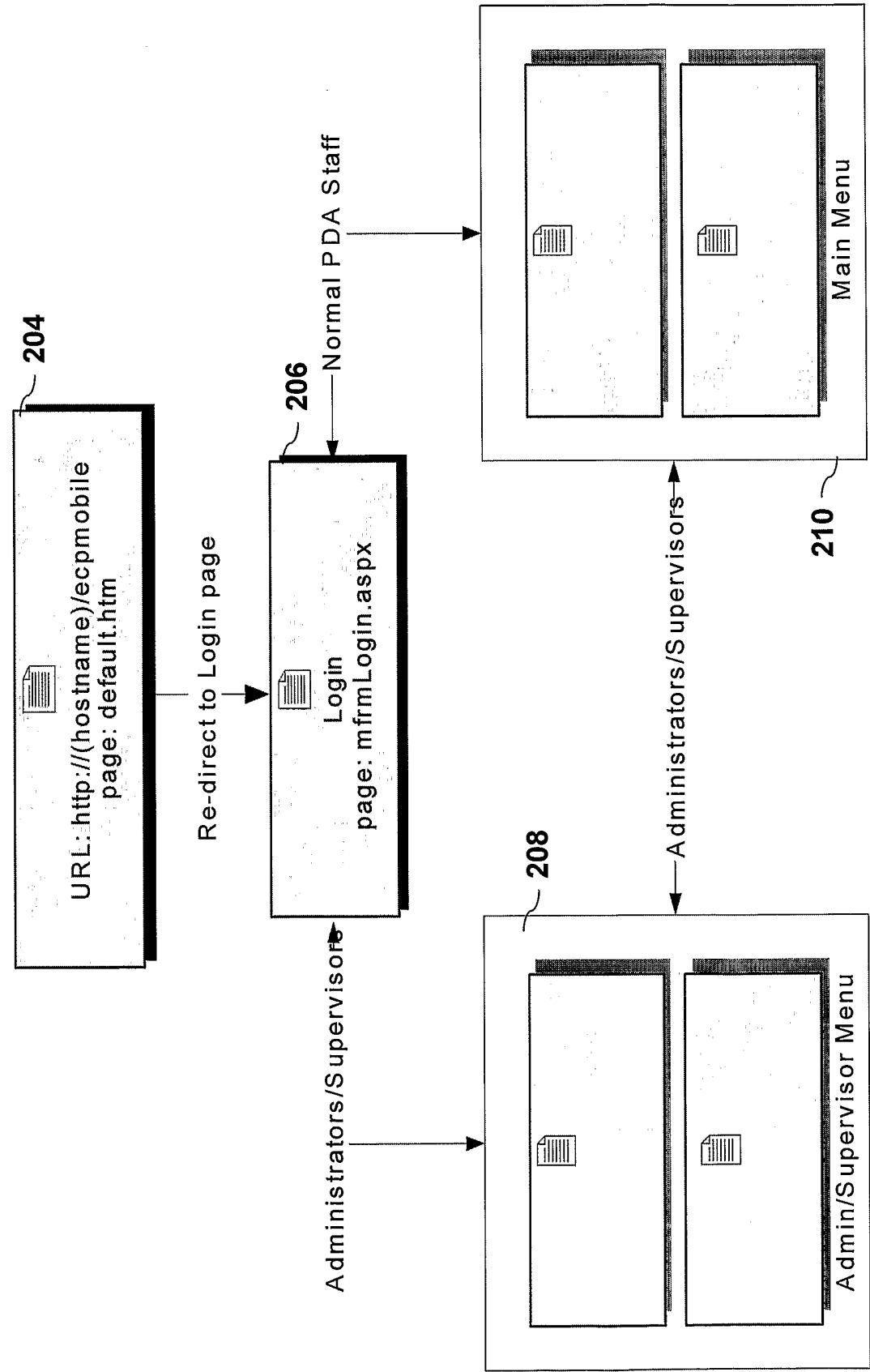
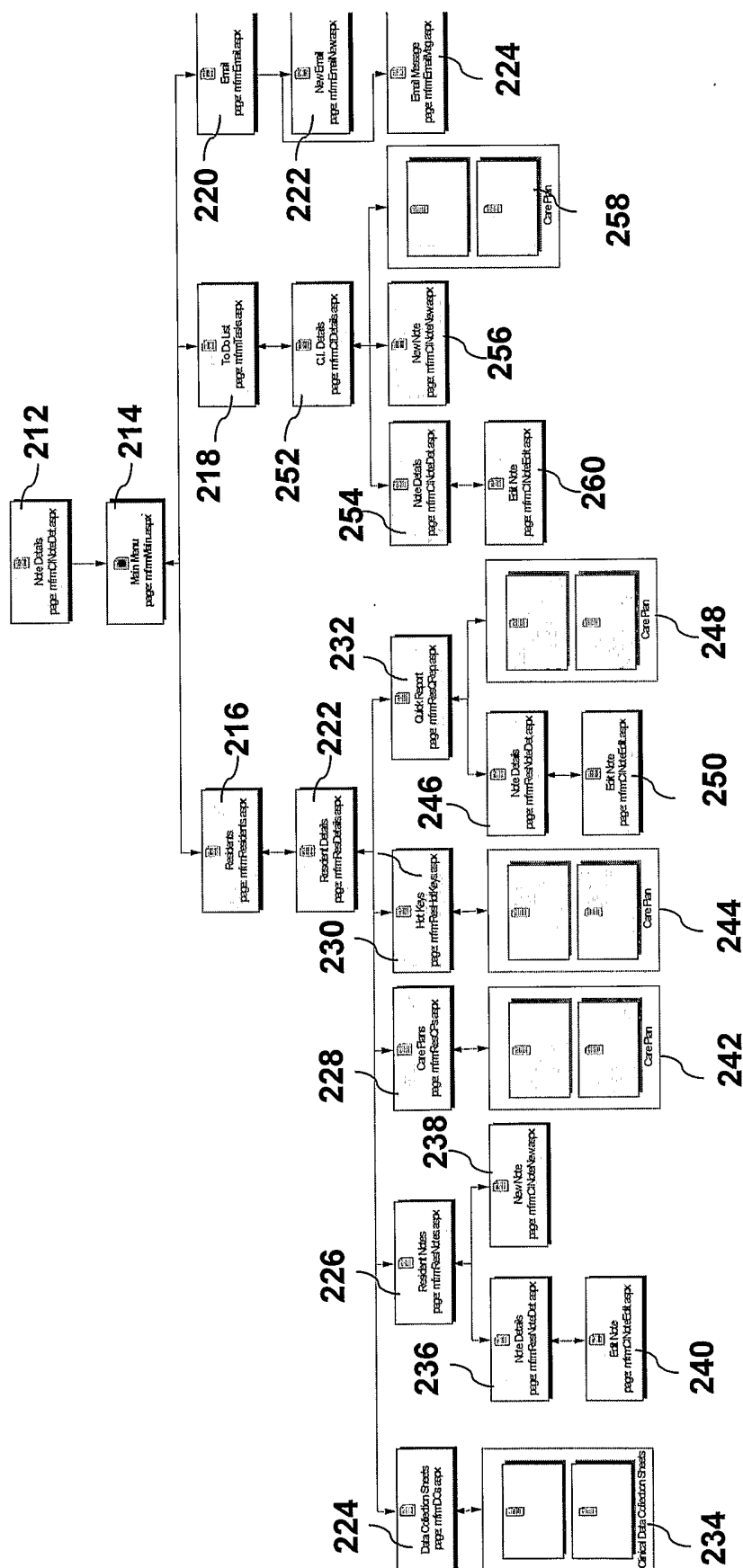


Figure 16



## Figure 17

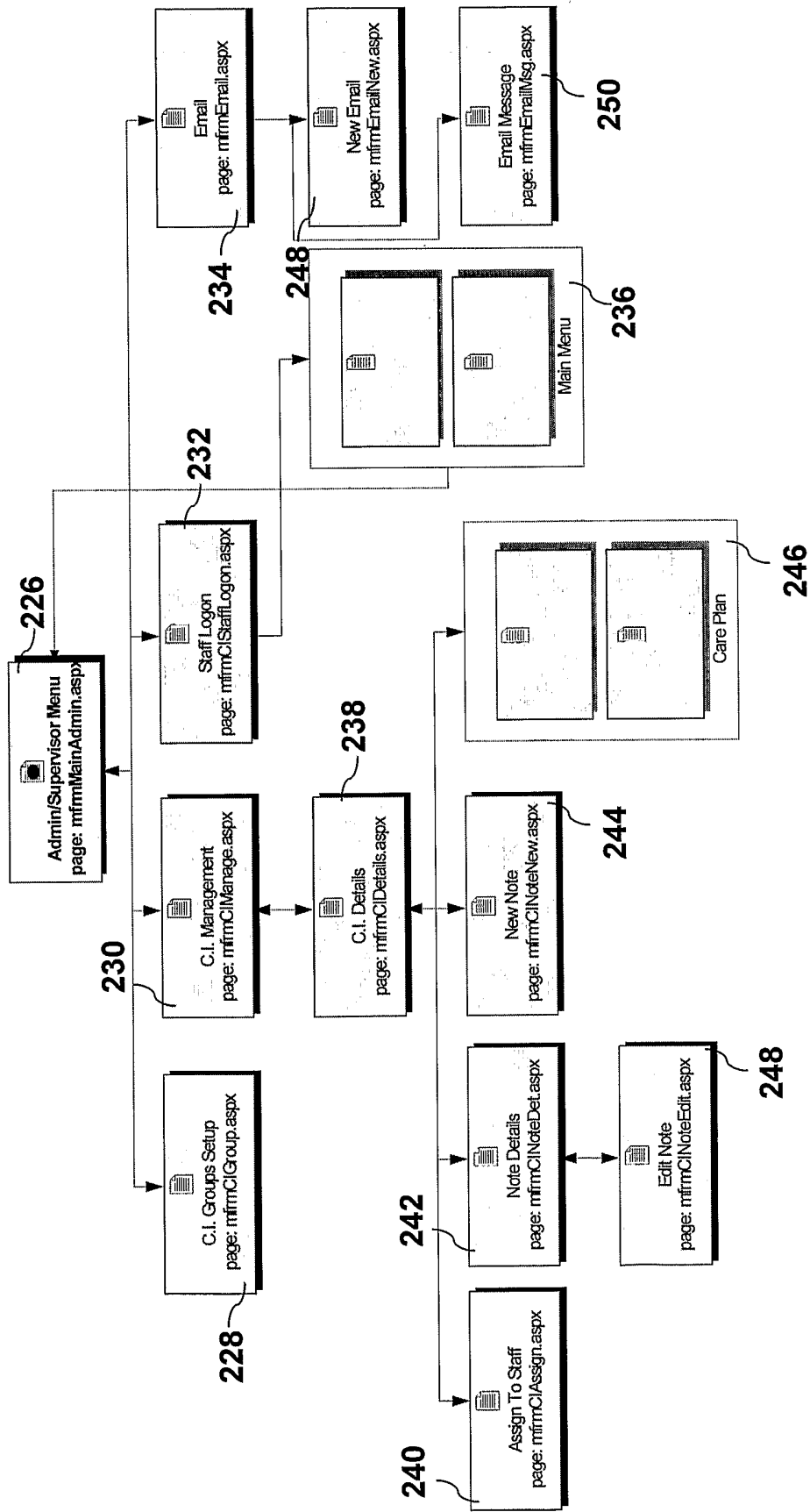


Figure 18
























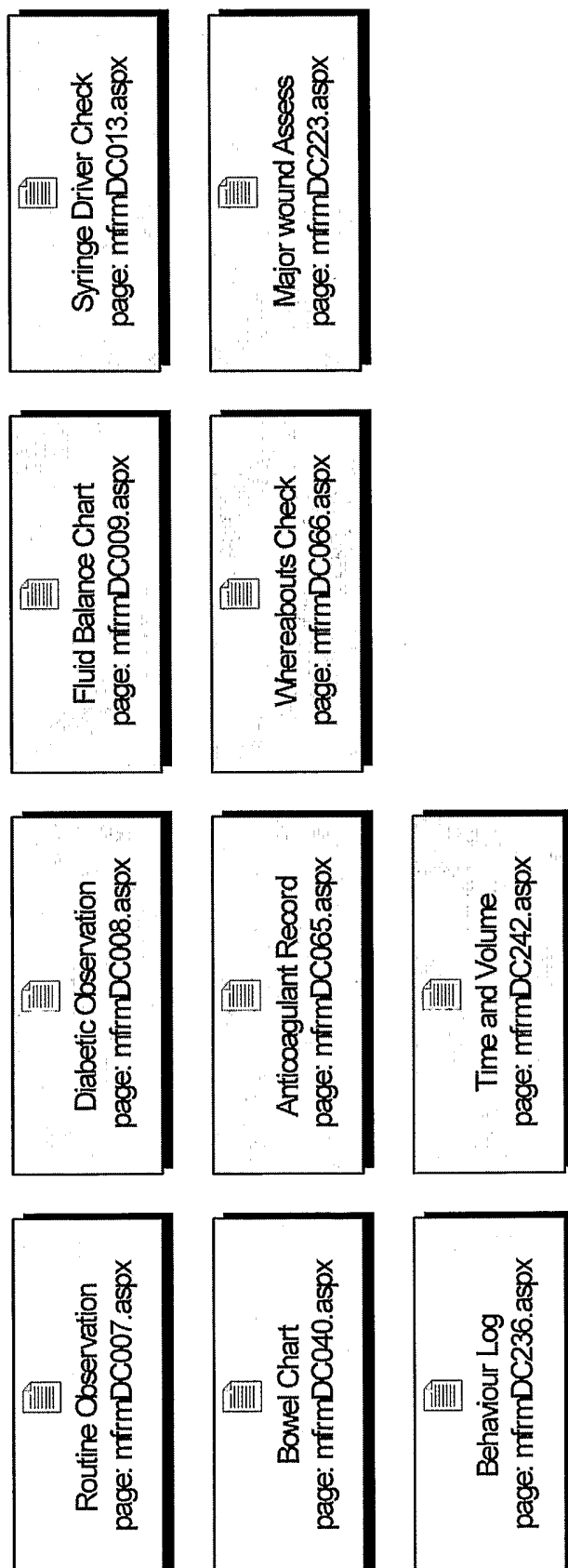
 Medication Info page: mfrmResCP202.aspx	 ADL Mobility page: mfrmResCP204.aspx	 Physio Assess page: mfrmResCP205.aspx	 RN Physical Therapy page: mfrmResCP207.aspx
 ADL Skin Integrity page: mfrmResCP208.aspx	 ADL Sleep/Rest page: mfrmResCP209.aspx	 ADL Elimination page: mfrmResCP210.aspx	 ADL Swallow Problems page: mfrmResCP211.aspx
 ADL Eat/Drink page: mfrmResCP212.aspx	 ADL Personal Hygiene page: mfrmResCP213.aspx	 Speech/Language page: mfrmResCP214.aspx	 Vision/Hearing page: mfrmResCP215.aspx
 Therapies/Services page: mfrmResCP216.aspx	 Social Support page: mfrmResCP217.aspx	 Welfare Care Plan page: mfrmResCP220.aspx	 Chronic Care Plan page: mfrmResCP221.aspx
 Acute Care Plan page: mfrmResCP222.aspx	 Behaviour High Risk page: mfrmResCP230.aspx	 Behaviour Resistive page: mfrmResCP231.aspx	 Behaviour Aggression page: mfrmResCP232.aspx
 Behaviour Verbal page: mfrmResCP233.aspx	 Behaviour Wander page: mfrmResCP234.aspx	 Behaviour Other page: mfrmResCP235.aspx	

Figure 19

**Figure 20**

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2006/000433

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.

**G06F 17/30** (2006.01)      **G06Q 50/00** (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)

USPTO with US Class Mark 705/2, Espace with IPC and keywords including wireless, patient

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 867 821 A (BALLANTYNE et al) 2 February 1999 See whole document	1-33
X	WO 2002/056151 A2 (THE REGENTS OF THE UNIVERSITY OF CALIFORNIA) 18 July 2002 See whole document	1-33
X,Y	WO 2000/014640 A1 (SONY ELECTRONICS, INC.) 16 March 2000 See page 3 lines 1-27 and Fig 1 (when combined with WO 2002/056151)	1-33



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  
05 July 2006Date of mailing of the international search report  
12 JUL 2006

Name and mailing address of the ISA/AU

AUSTRALIAN PATENT OFFICE  
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Authorized officer

**J.W. THOMSON**  
Telephone No : (02) 6283 2214

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2006/000433

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 845 255 A (MAYAUD) 1 December 1998 See whole document	1-33
X	US 6 463 417 B1 (SCHOENBERG) 8 October 2002 See abstract, col 3 lines 20-52, col 4 lines 8-51 and claims 12-25	1-33
X	US 6 381 577 B1 (BROWN) 30 April 2002 See Figs 1-2, col 3 lines 31-48, col 3 line 49 – col 4 line 2, col 5 line 65 – col 6 line 25	1-33
X	US 6 154 726 A (RENSIMER et al) 29 November 2000 See abstract, col 1 line 50 – col 2 line 20, col 2 line 43-57, col 3 lines 6-33	1-33
X	WO 2002/069099 A2 (ALARIS MEDICAL SYSTEMS, INC.) 6 September 2002 See whole document	1-33
Y	US 6 151 581 A (KRAFTSON et al) 21 November 2000 See whole document (when combined with WO 2002/056151)	1-33
A	US 6 272 470 B1 (TESHIMA) 7 August 2001 See whole document	
A	US 4 835 372 A (GOMBRICH et al) 30 May 1989 See whole document	

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2006/000433

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	5867821	CA	2125300		
WO	02056151	CA	2434255	US	2004073453
WO	0014640	AU	56953/99	EP	1116117
				US	2002002596
US	5845255	AU	39722/95	BR	9509357
		EP	0800680	US	5737539
		US	2002042726	US	2003144884
		WO	9613790	US	2005060197
US	6463417	AU	47231/01	CA	2400160
		WO	0163538	EP	1269378
US	6381577	AU	13097/00	AU	15998/99
		AU	20342/00	AU	22056/99
		AU	23656/95	AU	28313/97
		AU	47534/01	AU	49791/97
		AU	54620/99	AU	56088/94
		AU	60468/00	AU	61435/99
		AU	62596/99	AU	62597/99
		AU	92822/01	AU	97910/98
		CA	2203769	CA	2235929
		CA	2307033	CA	2310648
		CH	694037	EP	0670064
		EP	0789899	EP	0858349
		EP	1012739	EP	1032903
		EP	1049523	EP	1143854
		EP	1183586	EP	1198771
		EP	1323062	EP	1502614
		US	5307263	US	5569212
		US	5678571	US	5720733
		US	5792117	US	5794219
		US	5828943	US	5832448
		US	5887133	US	5897493
		US	5913310	US	5918603
		US	5940801	US	5951300
				AU	18379/00
				AU	23505/00
				AU	41456/96
				AU	52938/01
				AU	56780/99
				AU	61589/99
				AU	88905/01
				CA	2148708
				CA	2287903
				CA	2310667
				EP	0760138
				EP	1011509
				EP	1032906
				EP	1146813
				EP	1320823
				NZ	338043
				US	5601435
				US	5782814
				US	5822715
				US	5879163
				US	5899855
				US	5933136
				US	5956501

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2006/000433

US	5960403	US	5985559	US	5997476
US	6023686	US	6032119	US	6068615
US	6101478	US	6110148	US	6113578
US	6144837	US	6151586	US	6161095
US	6167362	US	6167386	US	6168563
US	6186145	US	6196970	US	6210272
US	6233539	US	6240393	US	6246992
US	6248065	US	6260022	US	6270455
US	6330426	US	6334778	US	6352523
US	6368273	US	6375469	US	6379301
US	6968375	US	2001011224	US	2001013006
US	2001016310	US	2001047252	US	2002016530
US	2002019748	US	2002081559	US	2002133377
US	2003069753	US	2003163351	US	2003229514
US	2004019259	US	2004106855	US	2004107116
US	2004117207	US	2004117208	US	2004117209
US	2004117210	US	2004193377	US	2004199409
US	2004219500	US	2005027562	US	2005059895
US	2005080652	US	2005086083	US	2005172021
US	2005172022	US	2005228883	US	2005235060
US	2005256739	US	2005273509	US	2006004611
US	2006009705	US	2006009706	US	2006010014
US	2006080152	US	2006089969	US	2006100910
WO	0006024	WO	0011578	WO	0015103
WO	0017799	WO	0017800	WO	0018293
WO	0019346	WO	0032097	WO	0032098
WO	0033236	WO	0072452	WO	0169505
WO	0221317	WO	0225551	WO	0241227
WO	9411831	WO	9529447	WO	9614627
WO	9803215	WO	9816895	WO	9848720
WO	9918532	WO	9927483	WO	9932201
US	6154726	US	5845253	US	2004204961
WO	02069099	AU	49172/96	AU	78372/98
		CA	2215368	CA	2293640
		CA	2434322	CN	1493049
		EP	0814864	EP	0918556
		EP	1371003	EP	1532995
				HU	0303338

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/AU2006/000433**

	IL	117128		MX	PA03007540		NO	20033753
	PL	373360		RU	2003128870		US	5713856
	US	5836910		US	5941846		US	2002169636
	US	2006106649		US	2006122867		US	2006136271
	WO	9628209		WO	9856450		WO	9856451
US	6151581							
US	6272470	JP	10079770					
US	4835372	AU	23853/95	AU	58029/94	CA	1261968	
		EP	0230458	US	4857716	US	5179569	
		US	5307372	US	5640301	WO	8700659	
		WO	9414267	WO	9529436	ZA	9309436	
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.								
END OF ANNEX								