ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΕΣΣΑΛΙΑΣ

ΠΟΛΥΤΕΧΝΙΚΗ ΣΧΟΛΗ

ΤΜΗΜΑ ΜΗΧΑΝΙΚΩΝ
ΗΛΕΚΤΡΟΝΙΚΩΝ ΥΠΟΛΟΓΙΣΤΩΝ
ΤΗΛΕΠΙΚΟΙΝΩΝΙΩΝ ΚΑΙ ΔΙΚΤΥΩΝ

ΔΙΠΛΩΜΑΤΙΚΗ ΕΡΓΑΣΙΑ

MANAGEMENT OF TECHNOLOGICAL INNOVATION AND RESEARCH IN SOFTWARE AND HARDWARE PATENT LAW.

ΔΙΑΧΕΙΡΙΣΗ ΤΗΣ ΤΕΧΝΟΛΟΓΙΚΗΣ ΚΑΙΝΟΤΟΜΙΑΣ ΚΑΙ ΕΡΕΥΝΑ ΓΙΑ ΤΗΝ ΚΑΤΟΧΥΡΩΣΗ ΕΥΡΕΣΙΤΕΧΝΙΩΝ ΩΣ ΠΡΟΣ ΤΟ ΥΛΙΚΟ ΚΑΙ ΛΟΓΙΣΜΙΚΟ Η/Υ.

Μεταλλίδου Χρυσή

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Βόλος, Ιούλιος 2013

Ευχαριστίες

Θα ήθελα να ευχαριστήσω εκείνους που πίστεψαν σε μένα, με ενθάρρυναν να αποπειραθώ το εγχείρημα και με συμβούλευσαν με καταλυτικό τρόπο για τη συγγραφή αυτής της διπλωματικής εργασίας. Ευχαριστώ ιδιαίτερα τους επιβλέποντες καθηγητές μου για την παρότρυνση να ασχοληθώ με ένα θέμα που με ενδιέφερε ιδιαιτέρως, για την καθοριστική καθοδήγηση τους, για τις ουσιαστικές παρεμβάσεις τους και για τη συνεισφορά τους με τις τεχνολογικές και όχι μόνο, γνώσεις και εμπειρίες τους. Στο σημείο αυτό θα ήθελα να εκφράσω το μεγαλύτερο ευχαριστώ στην οικογένεια μου και τους ανθρώπους που νιώθω οικογένεια μου, για την αμέριστη συμπαράσταση και κατανόηση τους σε όλη τη διάρκεια των σπουδών μου. Επίσης, να τους ευχαριστήσω για την εμπιστοσύνη που έδειξαν στο πρόσωπο μου και για τη σθεναρή ενθάρρυνση και υποστήριξη τους να υλοποιήσω τους στόχους και τις επιθυμίες μου.

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Introduction

I. Technology and Law

Nowadays, technology evolves rapidly and since the technological achievements have become increasingly global and they have started to diffuse the markets worldwide, it is observed that even more technology professionals face the need to protect their intellectual assets and be certain that their new product or process will not be infringed by other upcoming inventors. This necessity of transforming novel ideas into protectable assets has result in a growing correlation between Technology and Law throughout the world.

For instance, each time someone installs new software on a computer, it is necessary to agree to respect the intellectual property rights of the creator, before using it.

Engineers and scientists who belong to the upcoming inventors have definitely the education and the experience in technological fields. However, practically they do not have the essential knowledge to protect their invention. It is of great importance that technology professionals should be aware of how and whether to obtain protection or not, before their invention is ready for the public, in order to avoid the possibility of losing their intellectual property rights, before even being awarded for a creative work.

II.The Purpose

On that ground the purpose of this dissertation is to refer to the procedure a new inventor has to undertake in order to obtain protection for his invention and gain the knowhow to use and benefit from his property rights. Generally, this dissertation is going to give an efficiently interface with intellectual property information according to the United States Patent and Trademark Office and the European Patent Office and indicate how to defend when those Intellectual Property Rights are infringed by a competitor. Since there exist different types of Intellectual Property, there exist different ways to protect an invention, too. This dissertation is going to refer to Technological Inventions and specifically Computer inventions as for Software and Hardware which are typically protected by Patents.

In addition, commercially useful ideas, inventions, products and methods are the foundation of many highly successful businesses. As a result, successful business owners and entrepreneurs take good consideration of their employees who grant exclusive Intellectual Property rights. For this reason and due to the contribution technological improvements have in a society as a whole, it would be of great interest to refer to the Management of Technological Innovation by governments, entrepreneurs and organizations.

Chapter 1

1.1 What are Intellectual Property Rights?

According to Howard B. Rockman in his book "Intellectual Property Law for engineers and scientists" and the Organization International Chamber of Commerce, the term "Intellectual Property Rights" generically describes intangible rights which are created by a person or an organization using Intellectual creative efforts. Those Intellectual Property Rights give their creator the right to control and profit from them. Intellectual Property Law is the field of Law which defines those Intellectual creations that are entitled to protection as Intellectual Property.

Through a system of Intellectual property rights, it is possible to ensure that an innovation or creation belongs only to its creator or producer and to immunize ownership and benefit commercially. By protecting intellectual property, society itself benefits and motivates people to invest time and resources to innovation and expand knowledge.

In general, intellectual property rights give the inventor the right to benefit from his creation for a period of time.

Intellectual Property Rights are granted under the national laws of each country. In addition, various international agreements on intellectual property rights allow an inventor to grant intellectual property rights at the same time in more than one country.

1.2 What is a Patent?

A patent is a technical publication. Patents are granted to an inventor who submits an application to the patent office he is willing to. A patent means prevention from exploiting, without the inventor's authorization, an invention by a competitor. It lasts for only a period of time. In addition, the inventor must disclose the

description of his invention in a document that is available to the public. Patents are a social connection among society and inventors.

The patent law defines what can be patented, under what circumstances and what is required to obtain it. It also defines the benefits and rights a patent grants to the patent owner and the ability to transfer of the intangible rights.

Patents mean improvement, new and useful process or machine. An issued patent describes the invention and its advantages over the “prior art”. Using the “claims”, the inventor has disclosed, a patent grant defines the bounds of the protection.

1.3 History of Protecting an Invention

It is well known that the inception of granting a Patent to an inventor, is placed in Italy Venice. It started as a custom and it spread to Germany, France, The Netherlands, England and United States. There is evidence that something like patents was used among some ancient Greek cities. In 500 BC in the Greek city of Sybaris all citizens were encouraged to contrive anything new in luxury.

Before the creation of the United States Constitutions, the governments of some European countries granted intellectual rights in novelty things. Furthermore, to encourage people who contributed to their society and culture, they recognized the right of a person to his own ideas and creations and used to grant governmental documents which sentenced the action of coping.

There is evidence that in Venice protection was granted from about the year 1200 for wells, flour mills and invention was encouraged for new machines and arts. Later, a ten year privilege was granting for a new machine or process in order to urge innovation, by public use and not by filing a document. Before

granting though, an examination in a form of an interview was occurred to check if the invention was novel. In case of infringement, the penalty was one hundred ducats and destruction of the invention.

Most of the history of the United States Patent system is based on the English system of law. In Great Britain the first sample of a patent, which was lasting for 14 years, was in 1558.

Having a look in the past and before the existing patent laws, inventors were creating new things in secret, in order to keep their invention safe from competitors. In 1623 in England it was started to urge inventors to disclose their invention to the public. In addition the law stated that once the patent was to expire the society would have the right to use the invention.

Nowadays patent law demands to submit a full description of the invention with the view to enable a skilled in the art person to experiment the invention and take the expected results. Moreover, it is very common in most countries that the full description includes drawings to achieve a more understanding representation.

In the case of Software Inventions many inventors place the source code in the patent specification. Other, do not and use flow diagrams to fully describe the invention.

1.4 Computer Patents

As technological innovations started to dominate the timeliness even more patent attorneys were wondering “Is computer software patentable?” In the beginning the answer was negative and improved into a possibly to become now positive.

According to Howard B. Rockman in his book “Intellectual Property Law for engineers and scientists” this answer evolved as the programs’ designers (**software**) started to separate their intellectual work from the machines’ designers on which the software ran (**hardware**). In the decade of 1950s all patent applications filed by software programmers were rejected by the U.S. Patent and Trademark Office because they regard software as a not patentable subject. Yet, the programmers who managed to gain a patent disclosed to the application a combination of software and hardware. According to Howard B. Rockman in his book “Intellectual Property Law for engineers and scientists” the following years the Supreme Court and the Court of Appeals for the Federal Circuit THE CAFC began to realize that computer programming could be of great worth and use to business and society. Today, laws exist in order to be feasible to grant a software patent under certain circumstances and criteria.

1.4.1 Instances of Software Inventions

According to Howard B. Rockman in his book “Intellectual Property Law for engineers and scientists”,

1)in the 1995 CAFC case of IN re Beauregrard 53 FED.3d 1583, IBM appealed the US Patent and Trademark Office’s rejection of a patent application related to software in a floppy disk.

The Patent and Trademark Office decided to issue guidelines for the examination of software patents. In 1996 the United States

Patent and Trademark Office issued “Examination Guidelines for Computer related inventions.”

2)the 1999 CAFC case AT&T v. Excel Communications, 172 Fed 3d 1352 confirmed the State Street holding by stating: “the mere fact that a claimed invention involves inputting numbers calculating numbers outputting numbers and storing numbers in and of itself would not render in non statutory subject matter, unless, of course, its operation does not produce a useful concrete and tangible result. A conclusion about this invention is whether even pure mathematics can now be patented.”

1.4.2 Preparing a Patent application for Computer Inventions

Having already decided to apply for a patent, it is necessary to take under consideration the following issues.

I.Specification;

a patent application concerning computer inventions should state clearly the purpose of the invention and the patent subject. The specification should also explain the claims and define the novelty of the invention.

According to the United States Patent and Trademark Office the invention should explain its useful character and the results it causes. It is significant in a patent disclosure application to refer to all patent applications before the recent invention, emphasizing the better features and results this computer invention has, opposed to the prior art.

Specifically, it is important to refer to;

i) what are the results of the computer invention when the processes are performed by the new software.

ii) how the computer is to be adjusted in order to provide the operations and results that was stated in the patent application specification. In other words, describe the functionality of the invention.
iii) State the relationship of the computer program to the environment outside the computer invention. This refers to machines, devices, materials or process steps except those of the computer invention.
iv) Include a description of the functionality and the best mode of operations this new software results in.

II.The Claims;

The most important thing in a patent application are the claims.The claims define the invention totally.According to Howard B. Rockman in his book "Intellectual Property Law for engineers and scientists" in computer patent applications the structure of a patent claim consists of a combination of hardware and software. It is recommended to use flow diagrams to describe the process. Each and every claim should explain all of the elements that are important to illustrate the invention. The claims should emphasize what is the novel thing the inventor has invented.

III.Types of Claims

i)claims for products could be for inventions referring to machines or manufactures.

- A machine is a structure consisting of individual devices or combinations of them.
- A manufacture is a process which results products from the elaboration of materials, giving them new substance.

ii) process claims could be for inventions that includes a process which means requiring one or more steps to take in order to achieve the desired result.

Computer related patent claims consist a way to explain a function and must be preceded by the description of the invention in the specification which illustrated the structure of a computer or the computer component implemented in hardware or software.

Examples of defining such elements in claims are:

1) A computer program with a functionality operated in hardware and software
2) A logic circuit or other component that performs operations driven by a computer program
3) A computer memory encoded with instructions to perform so as to provoke to a computer a specific reaction.

IV.The Description

The invention that is intended to apply for a patent should disclose a full detailed description of its use, novelty and functionality according to a software view.

A software's invention patent application must include a specification which guides a person skilled in the art to understand the process and perform the claimed invention without pointless operation and experimentation.

The validity of the patent application as for computer related inventions requires a patent disclose as for hardware and software and a formulation of the interrelationship interdependence between them.

The description in the patent application must ensure that the inventor is aware of the subject which is claimed to be novel and non obvious until the filing date of the application.

Normally, to write code for a software program does not need exclusively experimentation or a source code but the functions to be disclosed. Flow charts usually are used to convey the proper functionality.

V.Referring to prior art

In computer programming patent applications it is necessary to refer to prior art so as to indicate the subject the inventor wants to patent and see the difference between this invention and history. It is important to clarify that this is less critical when we refer to circuits which are included in a system or when we refer to standard components which are connected into a known computer system and a standard device attached to that system.

1.5 EUROPEAN PATENT LAW

According to the European Patent Office, patents refer to technical and functional aspects of inventions. Patents could be granted in individual countries and they last for a period of time. They are generally granted by a national patent office. In order to gain a patent it is necessary to apply for it and disclose the invention by describing it technically. According to the 1883 Paris Convention, "someone who files an application in one country is able to claim priority of the filing date of that application for later applications in other countries, provided that they refer to the same invention and are filed within twelve months of the first one."

1.5.1 When to file a European Patent application?

Patenting an invention ensures economic benefits. When protection is needed in more than four European countries, it is better to file a European patent application rather than an international one.

1.5.2 Advantages of a European Patent

According to the European Patent Office,

the European Patent Convention enables an inventor to gain patent protection in about 40 European countries with one application. The inventor can select the desirable countries for protection. There exist three official languages English, French, German.

The contracting states according to European Patent Convention that the patent laws have power are; Albania, Austria, Belgium, Bulgaria, Cyprus, Croatia, Czech Republic, Denmark, Estonia, Finland, Skopia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg,

Malta, Monaco, Netherlands, Norway, Poland, Portugal, Romania, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

It is also possible to extend patent rights to non European Patent Convention states, such as Bosnia and Herzegovina, Montenegro and Serbia, due to the European patent extension agreements the European patent Organization has signed.

A European application can also be derived from an international application filed under the Patent Cooperation Treaty-PCT. This Treaty offers a patent application for over 140 countries worldwide.

According to the European Patent Office; “If the inventor or one of the co-applicants have the residence or principal place of business in a contracting state which has a language other than English, French, German,as an official language, or if the inventor or one of the co-applicants are a national of that state but are resident abroad, and a European patent application is filed to request examination in one of the states official languages, there exist a 20% reduction in the filling and examination fees.”

According to the International Chamber of Commerce and the European Commission,(which represents the interests of Europe, proposes new legislation to the European Parliament and the Council of the European Union, and ensures that European law is correctly applied by member countries,)
in 2012, Member States and the European Parliament agreed on a **“patent package”.** This is a legislative initiative consisting of two Regulations and an international Agreement, for creation of a unitary patent protection in Europe. The patent package has power for 25 Member States (except Italy and Spain).
Once the Agreement and the Regulations enter into force, it will be possible to obtain a European patent for an invention in 25 Member States, providing huge cost advantages and reducing administrative burdens.

1.5.3 Patents in Europe

Under the law of European Patent Convention, “patents are granted only for inventions that are new, that involve an inventive step and that are industrially applicable. The invention must not be known in the public, must be obvious to a skilled person and must be manufactured or used industrially.” Inventions such as a computer program are also patentable according to article 52 “ if, when running on a computer, it causes a further technical effect going beyond the “normal” physical interaction between the program (software) and the computer(hardware).”

1.5.4 Novelty

An invention is considered to be new if its performance and features are not related to the prior art. According to the European Patent Convention prior art is everything was made and was available to the public anywhere in the world in any way, before the date of filing.

1.5.5 Inventive Step

An invention should include an inventive step which is intended to prevent exclusive rights forming barriers to development. Inventive step is usually evaluated in terms of the problem the invention solves. In other words whether the solution presented to the problem in the patent application is obvious or not to the person skilled in the art.

1.5.6 Prior Rights

The Prior rights refer to a Patent Cooperation Treaty application which is filed before the date of filing or priority but not published until on or after that date.

The European Patent Office forms part of the state of the art for the purposes of Article 54 “the filing fee has been paid to the European Patent Office and the Patent Cooperation Treaty application is published in one of the European Patent Office’s official languages (English, French or German). If the PCT application was published in Arabic, Chinese, Japanese, Korean, Portuguese, Russian or Spanish a translation into one of the languages of the EPO must have been filed with the EPO, which will publish it.”

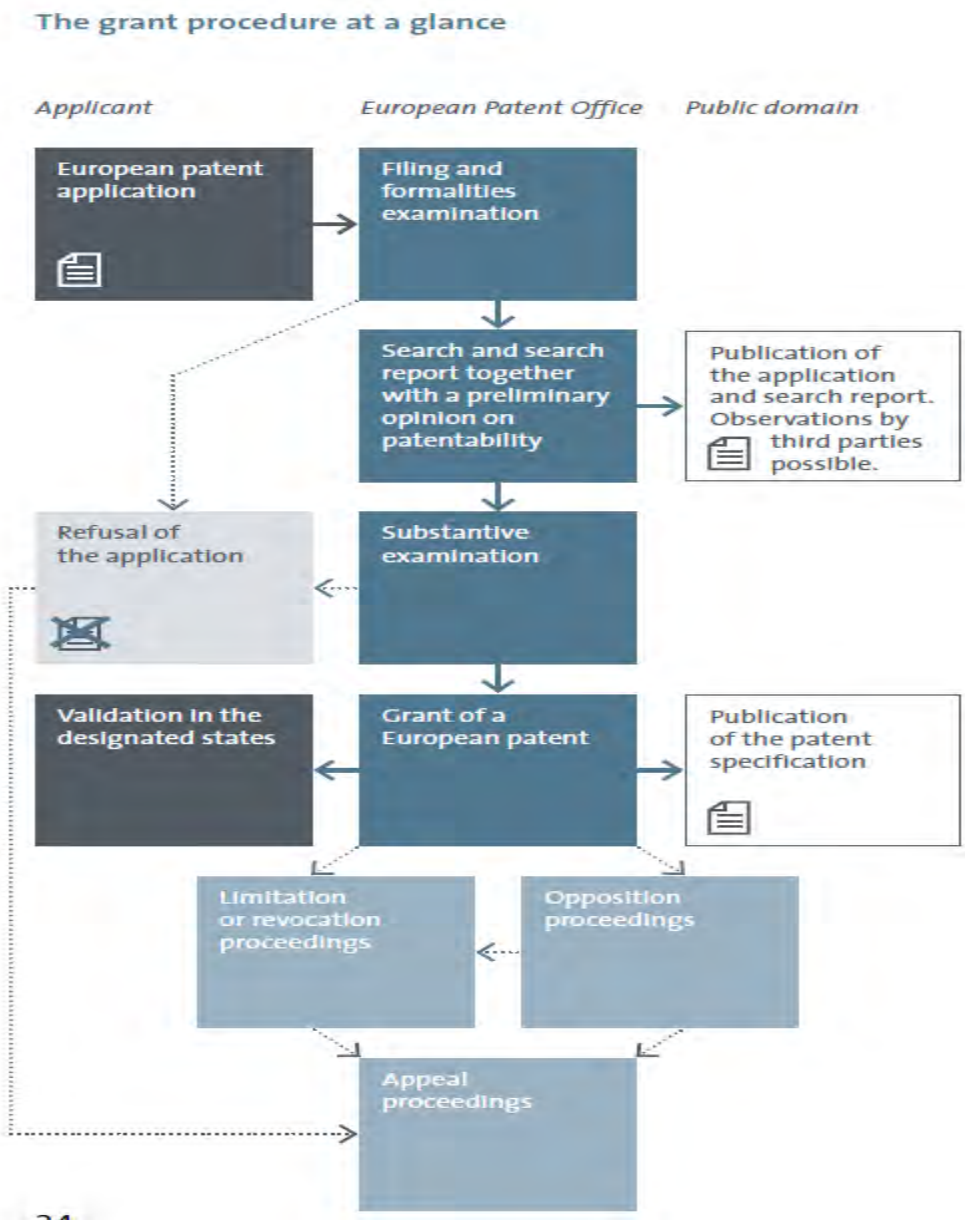

Image 1-European Patent Office - www.epo.org

1.5.7 Fill The European Patent Application

1.5.7.1 Identify the Inventor

According to the guideline of European Patent Office, “a European patent application may be filed by any natural or legal person, or anybody equivalent to a legal person, irrespective of nationality and place of residence or business.” A European patent application may be filed by two or more applicants who could be from different contracting states. In that case there must exist different applications for different contracting states.

In the case the inventor is not the sole inventor,it is necessary to file the designation of the inventor in a separate document. Forms for designating the inventor can be obtained free of charge from the European Patent Office and the national industrial property offices (www.epo.org). The inventor will be mentioned in the published patent European application, in the European patent specification, in the Register of European Patents and in the European Patent Bulletin.

1.5.7.2 Claiming Priority

Having filed a patent application for any state party to the Paris Convention for the protection of industrial property or any member of the world trade organization, it is possible to claim priority. The European patent application must be filed no later than twelve months after the first application. It is also possible to claim multiple priorities for any claim. If multiple priorities are claimed then time limits are computed from the earliest priority date. To claim the priority of an earlier application you must indicate the date ,country and the file number of the earlier application.

The value of claiming priority is that the date of priority determines the prior art for the European patent application.

The European Patent Office examines only the formal conditions for claiming priority. According to article 54(3) “The claimed

subject matter for which priority is claimed must be derivable directly and unambiguously from the full disclosure of the invention in the priority document."

1.5.7.3 Representation

If the inventor's residence or business locates in a contracting state, it is possible to act proceedings before the European Patent Office. In case the inventor is not residence and his business is not located in a contracting state, a representative should act all proceedings before the EPO. **Only professional representatives who are listed by the European Patent Office can act representation.**

1.5.8 Presenting the Invention

1.5.8.1 Disclosing the Invention

The European patent application must disclose the invention and should illustrate and describe the invention in detailed and clear way so as to a person skilled in the art, can totally understand. The description and possible existing drawings help in the development of the claims. The claims, now, indicate the extent of the protection, the inventor requires.

1.5.9 What includes a European Patent application?

According to the European Patent Office, European patent applications consist of four or five parts:

"A request for grant, a description of the invention, one or more claims, any drawings referred to in the description or the claims and an abstract."

1.5.9.1 Request for grant a Patent

Requests should be filed using an official form, which an inventor has a free access to it through the page www.epo.org/forms.

The following are the instructions for the documents the inventor has to apply for a patent, according to European Patent Office:

a)The documents making up the European patent application (claims, drawings and abstract) must be filed in a single copy.

b)The documents must be on strong, pliable, white A4 paper.

c)Each document making up the application(request, description, claims, drawings and abstract) must begin on a new sheet.

d)All the sheets must be numbered in consecutive Arabic numerals, which must be positioned top centre but not in the top margin.

e)The following minimum margins(type area) must be left blank:

top: 2cm

left:2.5cm

right:2cm

bottom:2cm

f)The lines of each sheet of the description and the claims should be numbered in sets of five, the numbers appearing on the left side to the right of the margin.

g)The line spacing must be 1.5cm

h)There must not be any handwrite additions to the text.

1.5.9.2 Description of the Invention

The description must describe the invention clearly for a person skilled in the art to be able to understand. The description is the basis of the development of the claims.

According to the European Patent Office, in the description the inventor must:

a)Mention the technical field to which the invention belongs. It is recommended to refer to the prior art.

b)Indicate the background of the invention and the history of the field the invention belongs to. Refer to the utility of the invention in an understanding way and mention any source documents. “Source document citations must be verifiable: patent specifications by country and number; books by author, title,

publisher, edition, place and year of publication and page numbers, periodicals by title, year, issue and page numbers."

c) Claim the invention. The invention was created in order to solve or serve a technical problem. To underline its utility, according to the independent claims, refer to the features of the solution.

d)Briefly describe what is illustrated in any drawings, making sure you give their numbers.

e)Describe in detail at least one way of using the claimed invention, by using examples and drawings, if there exist any.

f)Indicate how the invention could be associated with industrial application.

1.5.9.3 Claims

Regarding the technical features of the invention, the claims describe and define the subject of the invention and the patent protection is sought. They must be clear, meaningful and relevant to the description.

Claims consist of two parts, according to the guideline of EPO:

i)a prior art portion

"In the first claim and all other independent claims, the prior art portion designates the subject of the invention and the technical features which defines it."

ii) a characterizing portion

"The characterizing portion defines the technical features for which protection is sought in combination with the features in the prior art portion."

1.5.9.3.1 Dependent and Independent Claims

A European patent application may not contain more than one independent claim in the same category. They must define the features of the invention.

Each independent claim may be followed by one or more dependent claims which give more explanation of the innovation.

Dependent claims state the additional features for which protection is sought.

Number the claims reasonably in Arabic numerals. The wording of the claims must be meaningful and understanding.

Furthermore, references to the description or drawings, particularly in the form of “as described in part..of the description” or “as illustrated in figure…of the drawings” are not allowed unless they are necessary.

1.5.9.3.2 Claims and Fees

If the European patent application comprises more than 15 claims, then a claim fee is paid for each claim for the next claims above the 15th. The claims’ fees must be paid within one month of filing them.

If the application includes several sets of claims fee is payable only for each claim above the 15th in the set that contains the greatest number of claims.

1.5.9.4 Drawings

Drawings illustrate the features of the invention and assist the documents of description and claims. Reference signs not mentioned in the description and claims must not be used in the drawings.

Drawings must not contain text matter except, keywords referring to electric circuits and block schematics or flow sheet diagrams. Flow sheets and diagrams are considered to be drawings.

1.5.9.5 Abstract

The abstract is only to inform the examiners of a patent application for the technical field of the invention. The abstract is not intended to ensure patentability of the invention.

It must be written in a short but clear and targeted way so as to be efficiently manageable by a person skilled in the art. It is also must be possible to estimate whether the European patent application itself is of help.

One important thing about the abstract, according to European Patent Office, is the title of the invention and then a summary which the abstract should contain, (no more than 150 words long), of the disclosure included in the description, claims and drawings. It should include the technical field of the invention, and be clear about the technical problem, the solution of the problem through the invention and the use of the invention.

If an application contains drawings, then figures should be included with the published abstract.

If an abstract has been published, it cannot be editable.

1.5.9.6 Signature

According to the European Patent Office, any documents relating to the European patent application must be signed. "The signature may take the form of a handwritten signature, reproduction of the filer's signature on faxes or in the case of online filings by facsimile, text string or electronic signature. The name and position of that person must be clear from the signature."

1.5.10 Where to file and how?

File for a European patent application

A) with the EPO in Munich, its branch at The Hague or its sub-office in Berlin, but not at its sub-office in Vienna.

B) with the central industrial property office or other competent authority of a contracting state if the law of that state so permits.

File an application in written form, in electronic form, in person by post or by fax.

File by fax with the EPO except of Cyprus, Estonia, Hungary, Italy, the Netherlands, Romania and Turkey.

Cannot file European patent applications with the EPO by email, telegram, telex or teletext.

1.5.11 Publication of the application

The application is published with the search report 18 months after the day of apply for a patent. In the next 6 months, applicants should decide if they want a substantive examination. Alternatively an applicant who has requested examination already will be invited to confirm whether the application should proceed.

From the date of publication, a European patent application has a provisional protection of the invention in the states required in the published application.

1.5.12 The Examination

The European Patent Office examines, if the invention is patentable and if the European patent application obeys the requirements and laws. The grant of a patent will be issued as soon as the claims of the invention will be translated into the other two official languages.

There exist three examiners, one of whom decides if the invention is patentable so as to accept or not the application and contacts the applicant or representative. The final decision if the application is accepted, is taken by all examiners.

1.5.13 Stages of the procedure

When an application is filed the request for examination, the EPO examines, whether the invention is patentable.

After receiving the search report and before the examiner's first communication, the inventor should file any observations or objections for the search report.

According to the European Patent Office "If the examiner has objections to the application, he sends a first reasoned communication inviting the inventor to file any observations and maybe submit amendments to the description claims and drawings."

After the inventor's reply to the examiner, the second one will issue the first communication within three months or propels the examination. It is beneficial for the inventor to file any search results relating to an earlier application.

If the examiner considers that the application is not completely grantable, he will communicate the inventor again. The inventor may request oral proceedings.

If the examiners decide that the patent cannot be granted, the application will be refused. The decision is issued with the reasons of refusal.

If the application and the invention are according to the requirements of the Convention, then a patent grant will be issued for the invention, regarding that the fees have been paid in due time and a translation of the claims into the other two official languages of the European Patent Office is issued.

1.5.14 Fees

Fees for granting a patent in Europe must be paid in Euros.

The following fees are payable for a European patent application according to the European Patent Office:

a)filing fee and any additional fee for the 36th and each subsequent page of the application

b)search fee

c)claim fee in respect of the 16th and each subsequent claim

d)designation fee

e)extension fees(one for each extension state)

f)examination fee

g)renewal fees in respect of the 3rd and each subsequent year

"After filing the application the filing and search fees (and any claims fees required, where claims were filed together with the application) must be paid within one month of the date of filing.

The designation fee(and any extension fees) must be paid within six months of the date on which the European Patent Bulletin mentions publication of the European search report. The examination fee is payable within the same period."

The filing and search fees at the beginning of the procedure amount to about 1300 EUR. An idea of what costs the whole procedure, it is about 5100 Euros to take a European patent application to the grant stage.

1.6 UNITED STATES PATENT LAW

In order to grant a patent in the United States, an inventor should deal with the criteria the United States Patent and Trademark Office has issued. The most important is that the invention should be patentable. There are also different results from granting a patent such as the inventor's future economic situation and the benefits a company he works for,may have. Furthermore, the question an inventor should answer is whether there is a market for his invention or whether a market could be created for it or whether his innovative product or process could survive against other competitive products and processes.

1.6.1 The Invention

Patentable means that the invention has a purpose which achieves. According to the Constitutional mandate of Article I section 8, "patents can only be granted for advances in the "useful" arts."

That means that inventions in order to grant a patent should be useful and work for its intended purpose.

1.6.2 Novelty

Patents are granted only for inventions that are novel, which means that inventions should be innovative as prior art existed in the world. Different countries have different definitions of what is prior art. For example a product which already uses a candidate inventor's "new" technology, is considered prior art and cancels the invention.

1.6.3 Non obviousness

Even there are differences between the new invention to be patented and the prior art, if those differences would be only obvious to one skilled in the patents, protection may not be obtained.

1.6.4 History of Publications

The novelty and the validity of a new invention which requires to grant a patent is checked taking consideration already published material and prior to the current patent application patents and public inventions worldwide.

According to the United States patent examination and legal system

"1) any publication that shows all or part of your invention prior to your invention date is prior art,

2) any prior publication or patent that was made public or issued more than one year before the patent application filing date is also prior art under the patent laws."

On that grounds, it is possible for a new inventor before the filing of a patent application to obtain detailed information about the prior art so as to judge the novelty of the invention.

1.6.5 Who obtains a Patent?

In the United States and in Europe as well, patent applications must be filed in the names of the inventor or inventors if there is more than one. If there exists an agreement between a company and an inventor, the patent application can be assigned to the company for whom the inventors work. Also, the inventors can assign the patent rights to other people or companies.

In the United States only inventors can initially be named as applicants for the patent.

1.6.6 How to apply for a Patent?

There follows a flowchart concerning the procedure to grant a patent in United States. For information visit the site; www.uspto.gov

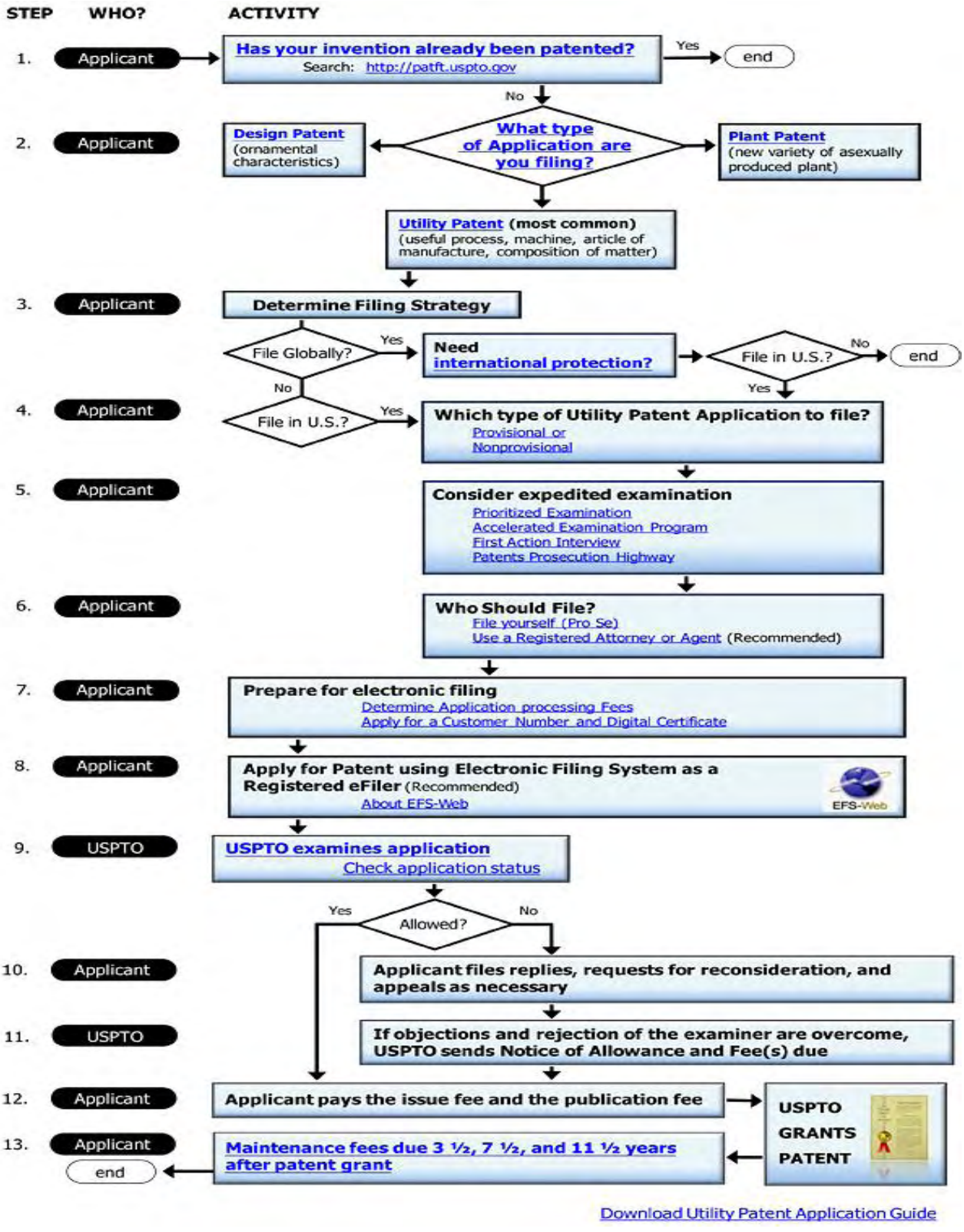

Image2- United States Patent and Trademark Office http://www.uspto.gov/patents/process/index.jsp

1.6.6.1 Novelty check

The most important thing that an inventor should do in order to obtain a patent, is to check the validity of the invention. That means first of all to check if the invention, he is willing to fortify, is novel compared to the state of the prior art. This novelty search is able to take place in the library of prior art in the public search room of the US patent and trademark office. Furthermore, through the internet, in www.uspto.gov there exist a "Field Search" where you can find the patent classification system with all patents according to subject matter by classes and subclasses. The novelty search indicates the inventor's knowledge as for the fields of science and technology related to the invention.

1.6.6.2 Apply for a Patent

The patent application must be submitted in the English Language or application or be accompanied by a translation in the English language, If an applicant files an application in a language other than English.

1.6.6.3 The Patent application

The United States Patent and Trademark Office rules as to what they expect in a patent application to see are;

The **Specification** (includes the claims and the description) is a written description of the invention and process and refers to the invention by the claims, which must begin on a new page. The specification must be clear and exact terms to enable any person skilled in the art or science to understand.

"For inventions involving computer programming, computer program listings may be submitted as part of the specification as set forth in 37 CFR 1.96(b) and (c)."

"If a computer program listing is submitted and is over 300 lines long (each line of up to 72 characters), the computer program listing must be submitted on a compact disc in compliance with 37 CFR §1.96, and the specification must contain a reference to the computer program listing appendix. A computer program

listing of 300 or less lines may be, but is not required to be, submitted on compact disc. The computer program listing on compact disc will not be printed with any patent or patent application publication."

"The pages of the specification (but not the transmittal letter sheets or other forms), including claims and abstract, must be numbered consecutively, starting with 1, the numbers being centrally located above or preferably below, the text. The lines of the specification must be 1.5 or double spaced (lines of text not comprising the specification need not be 1.5 or double spaced). It is desirable to include an indentation at the beginning of each new paragraph, and for paragraphs to be numbered (i.e., [0001], [0002], [0003], etc.)."

1.6.6.3.1 Title of the Invention

The title of the invention should broadly describe the purpose of the invention.

1.6.6.3.2 The Abstract

The patent application includes an abstract of the invention (150 words), which is the information page. This document briefly describes the novel features of the invention. The purpose of the abstract is to inform the United States Patent and Trademark Office and the public the nature of the technical disclosures of an invention.

1.6.6.3.3 Drawings

A patent application can contain drawings. The drawings illustrate the feature of the invention as specified in the claims.

"Information on drawing requirements is based substantially on 37 CFR §1.84.

Black and white drawings are required. For regular non-provisional utility applications, the “sheets” of drawings should be contained in an electronic document in PDF format filed via EFS-Web together with the other application documents in PDF format. Drawings made by hand should be scanned into PDF format for filing via EFS-Web.”

“The following margins are required:

- On 21.6 cm. by 27.9 cm. (8 1/2 by 11 inch) drawing sheets, each sheet must include a top margin of at least 2.5 cm. (1 inch), a left side margin of at least 2.5 cm. (1 inch), a right side margin of at least 1.5 cm. (5/8 inch), and a bottom margin of at least 1.0 cm. (3/8 inch) from the edges, thereby leaving a sight no greater than 17.6 cm. by 24.4 cm. (6 15/16 by 9 5/8 inches).
- On 21.0 cm. by 29.7 cm. (DIN size A4) drawing sheets, each sheet must include a top margin of at least 2.5 cm. (1 inch), a left side margin of at least 2.5 cm. (1 inch), a right side margin of at least 1.5 cm (5/8 inch), and a bottom margin of at least 1.0 cm. (3/8 inch) from the edges, thereby leaving a sight no greater than 17.0 cm. by 26.2 cm.”

1.6.6.3.4 Detailed Description

This is the longest section of the patent application and contains the detailed description of the invention. This document describes the relation between the elements of the invention and their cooperation with each other. It is required that the description is sufficient so that any person of skill in the art, science, could make and use the invention without long experimentation. Normally, in describing a mechanical or electrical invention, the structure is defined in a logical, from an input to an output.The best mode implemented by the inventor be stated in the description. Each element in the drawings should be mentioned in the description, too.

The description should also include;

- **Reference to other applications**

  The patent application should refer to earlier applications, if there exist, to establish the chain between them.
- **Field of the invention**

  The inventor should refer to the field of science or technology to which the subject of the invention “belongs”.
- **Brief description of the problems** that exist in the prior art which this invention is going to solve.
- **The results,** objectives and advantages of the invention, not achieved by the prior art.
- **brief summary of the importance of the invention**

  The inventor should disclose the operation, function and purpose of the invention. Then precedes the description of the drawings of the invention which show its substance.
- **brief description of the drawings** which illustrates the invention.

1.6.6.3.5 Claim the Invention

According to the United States Patent and Trademark Office, to apply for a patent, the inventor needs to claim the subject of the invention. The claims define clearly the invention, the field it belongs and its technical and innovative features and set the content and scope of the property rights the inventor desires to secure through the patent grant. In that way the inventor also prevents the invention from competitors and infringers. Whether a patent will be granted is determined, by the scope of the claims.

According to the United States Patent and Trademark Office,

“An application for a patent must contain at least one claim.”

“The claim or claims section must begin on a separate physical sheet or electronic page.”

“ If there are several claims, they must be numbered consecutively in Arabic numerals.”

“One or more claims may be presented in dependent form, referring back to and further limiting another claim or claims in the same application.”

“ All dependent claims should be grouped together with the claim or claims to which they refer to the extent practicable.”

“Each claim should be a single sentence, and where a claim sets forth a number of elements or steps, each element or step of the claim should be separated by a line indentation.”

I.Dependent Claims

A claim which depends, repeats the major elements of the preamble of the base claim from a previous claim.

According to Howard B. Rockman in his book “Intellectual Property Law for engineers and scientists”, dependent claims are used to:

1) “add an element not included in the patent claim”

2) “qualify an existing element of the patent claim”

3) “qualify a relationship between previously recited elements in the patent claim”

II.The body of a Claim

The body of a claim includes;

The Elements which are the structural parts of a machine, the steps of a process.

The relationship between the elements, which describes the way elements function in the structure.

The result of the invention should not be in the claim. The results are included in the specification of the patent application.

III.A Design Patent Claim

A design patent includes drawings and has a single claim about

“the ornamental design for a product substantially as shown”

The claim of the design patent will cover only the nonfunctional esthetic features of the invention.

1.6.6.4 Examination of the Patent application

The Patent examiner ensures that in the invention all technical requirements valid. Then he determines whether the claims of the application define an invention which is novel and non obvious compared to the prior art.

1.6.6.5 Filling Options

According to the United States and Trademark Office;

"A patent application can be filed through an electronic filing system called EFS-Web, delivery by US mail, or hand delivery to the Office in Alexandria ,Virginia. Effective November 15.2011, any regular application filed by mail or hand delivery will require payment of an additional $400 fee called the non electronic filing fee, which is reduced by 50 percent to $200 for applicants that qualify for small entity status.

The only way to avoid paying the additional $400 non electronic filing fee is by filing the application via EFS-Web."

More information is available at **http://www.uspto.gov/patents/process/file/efs/index.jsp**

1.6.6.6 Fees

If the inventor decides to file the application in paper, the Fee Transmittal Form (Form PTO/SB/17) may be used to calculate the prescribed filing, examination, and search fees, any excess claim fees or application size fee, and indicate the method of payment (by check, money order, deposit account, or credit card).

For applications filed in paper, an application size fee is due if the total number of pages exceeds 100 pages. Further, if the application has more than three independent claims or more than 20 total claims, excess claims fees will be due.

For more information about the fees check the Appendix or visit the page;

http://www.uspto.gov/web/offices/ac/qs/ope/fee031913.htm

1.7 Important Patent Examples

1.7.1 APPLE INC. VS SAMSUNG ELECTRONICS

It is now important that we refer to some patent examples of great technological, innovative and business interest in order to see how substantial is for an inventor to gain protection for his intellectual property and secure ownership of it.

To begin with, the enormous conflict between Apple Inc and Samsung Electronics as for the design of smart phones and tablet computers. Apple began litigating against Samsung in patent infringement suits. By July 2012 Apple and Samsung were litigating more than 50 ongoing around the globe with billions of dollars in damages claimed between them. While Apple won a ruling in its favor in U.S., Samsung won rulings in South Korea, Japan and the UK.

Apple accused Samsung of infringing on three utility patents and four design patents and Samsung accused Apple of infringing on United States on other Patents.

Apple's 2005 design patent -United States Patent Nos. 504.889, which consists of a sentence claim about the ornamental design of an electronic device, accompanied by nine figures depicting a thin rectangular cuboid with rounded corners.

On August 24.2012 the jury returned a verdict largely favorable to Apple. It found that Samsung had infringed on Apple's design and utility patents and had also diluted Apple's trade dresses related to the iPhone. The jury awarded Apple $1049 billion in damages and Samsung zero damages in its counter suit.

The jury found Samsung infringed Apple's patents on iPhone's Bounce Back Effect US patent No 7.469.381. On screen Navigation US patent No 7.844.915 and Tap To Zoom US patent No 7.864.163 and design patents that covers iPhone's features such as the home button ,rounded corners and tapered edges.

The US Patent 504.889 describing the ornamental design of the iPad was one of the few patents the jury concluded Samsung had not infringed.

The following pages enclose the United States Patent No 7.864.163 and the drawing Patent D504.889.

The following pages are from www.uspto.gov

www.patents.com

US007864163B2

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

(10) **Patent No.: US 7,864,163 B2**
(45) **Date of Patent: Jan. 4, 2011**

(54) **PORTABLE ELECTRONIC DEVICE, METHOD, AND GRAPHICAL USER INTERFACE FOR DISPLAYING STRUCTURED ELECTRONIC DOCUMENTS**

(75) Inventors: **Bas Ording**, San Francisco, CA (US); **Scott Forstall**, Mountain View, CA (US); **Greg Christie**, San Jose, CA (US); **Stephen O. Lemay**, San Francisco, CA (US); **Imran Chaudhri**, San Francisco, CA (US); **Richard Williamson**, Los Gatos, CA (US); **Chris Blumenberg**, San Francisco, CA (US); **Marcel Van Os**, San Francisco, CA (US)

(73) Assignee: **Apple Inc.**, Cupertino, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 688 days.

(21) Appl. No.: **11/850,013**

(22) Filed: **Sep. 4, 2007**

(65) **Prior Publication Data**

US 2008/0094368 A1 Apr. 24, 2008

Related U.S. Application Data

(60) Provisional application No. 60/937,993, filed on Jun. 29, 2007, provisional application No. 60/946,715, filed on Jun. 27, 2007, provisional application No. 60/879,469, filed on Jan. 8, 2007, provisional application No. 60/879,253, filed on Jan. 7, 2007, provisional application No. 60/824,769, filed on Sep. 6, 2006.

(51) **Int. Cl.**
G06F 3/041 (2006.01)

(52) **U.S. Cl.** **345/173**; 715/234; 715/781

(58) **Field of Classification Search** 345/173–178; 178/18.01–18.09, 18.11; 715/810, 828–831, 715/234, 781, 700
See application file for complete search history.

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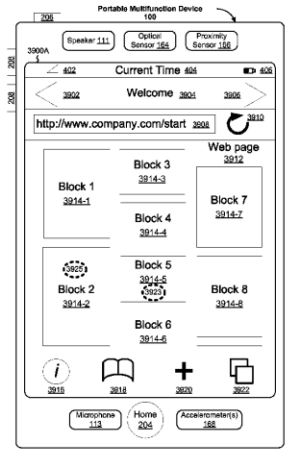
(Continued)

Primary Examiner—Stephen G Sherman
(74) *Attorney, Agent, or Firm*—Morgan, Lewis & Bockius LLP

(57) **ABSTRACT**

A computer-implemented method, for use in conjunction with a portable electronic device with a touch screen display, comprises displaying at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content, and detecting a first gesture at a location on the displayed portion of the structured electronic document. A first box in the plurality of boxes at the location of the first gesture is determined. The first box on the touch screen display is enlarged and substantially centered.

61 Claims, 29 Drawing Sheets



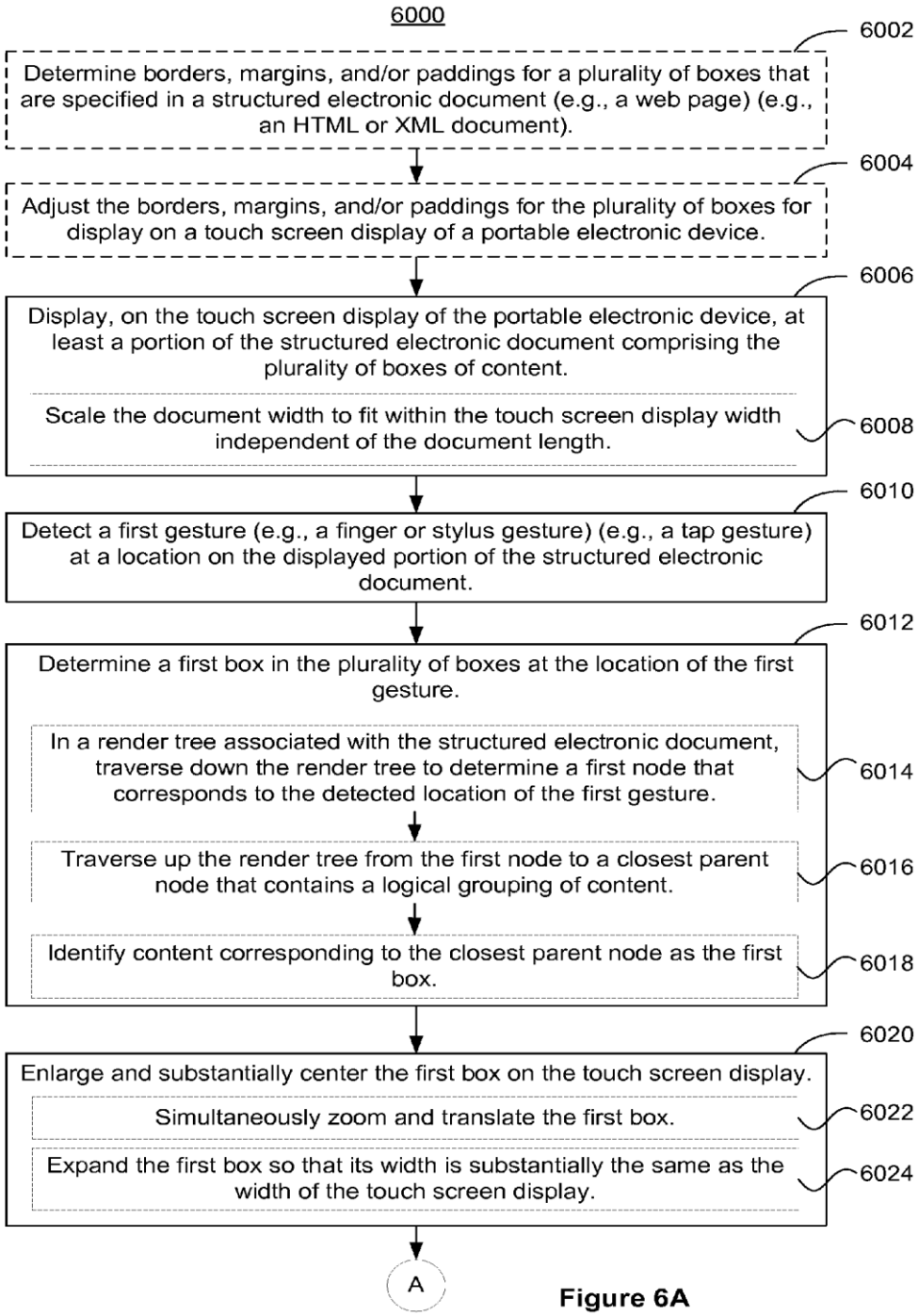

6000
6002
Determine borders, margins, and/or paddings for a plurality of boxes that are specified in a structured electronic document (e.g., a web page) (e.g., an HTML or XML document).
6004
Adjust the borders, margins, and/or paddings for the plurality of boxes for display on a touch screen display of a portable electronic device.
6006
Display, on the touch screen display of the portable electronic device, at least a portion of the structured electronic document comprising the plurality of boxes of content.
Scale the document width to fit within the touch screen display width independent of the document length.
6008
6010
Detect a first gesture (e.g., a finger or stylus gesture) (e.g., a tap gesture) at a location on the displayed portion of the structured electronic document.
6012
Determine a first box in the plurality of boxes at the location of the first gesture.
In a render tree associated with the structured electronic document, traverse down the render tree to determine a first node that corresponds to the detected location of the first gesture.
6014
Traverse up the render tree from the first node to a closest parent node that contains a logical grouping of content.
6016
Identify content corresponding to the closest parent node as the first box.
6018
6020
Enlarge and substantially center the first box on the touch screen display.
Simultaneously zoom and translate the first box.
6022
Expand the first box so that its width is substantially the same as the width of the touch screen display.
6024
A

Figure 6A

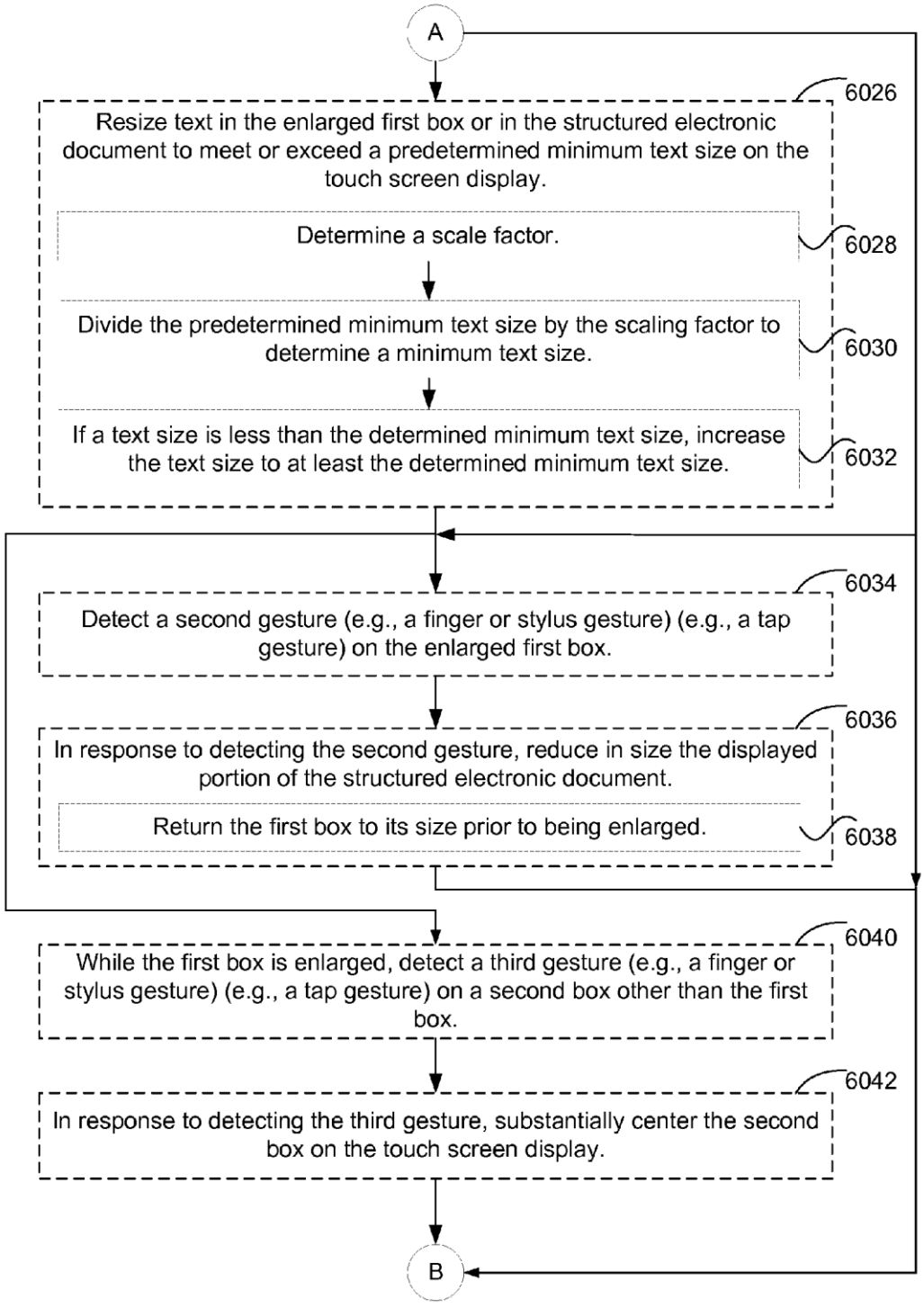

A
6026
Resize text in the enlarged first box or in the structured electronic document to meet or exceed a predetermined minimum text size on the touch screen display.
Determine a scale factor.
6028
Divide the predetermined minimum text size by the scaling factor to determine a minimum text size.
6030
If a text size is less than the determined minimum text size, increase the text size to at least the determined minimum text size.
6032
6034
Detect a second gesture (e.g., a finger or stylus gesture) (e.g., a tap gesture) on the enlarged first box.
6036
In response to detecting the second gesture, reduce in size the displayed portion of the structured electronic document.
Return the first box to its size prior to being enlarged.
6038
6040
While the first box is enlarged, detect a third gesture (e.g., a finger or stylus gesture) (e.g., a tap gesture) on a second box other than the first box.
6042
In response to detecting the third gesture, substantially center the second box on the touch screen display.
B

Figure 6B

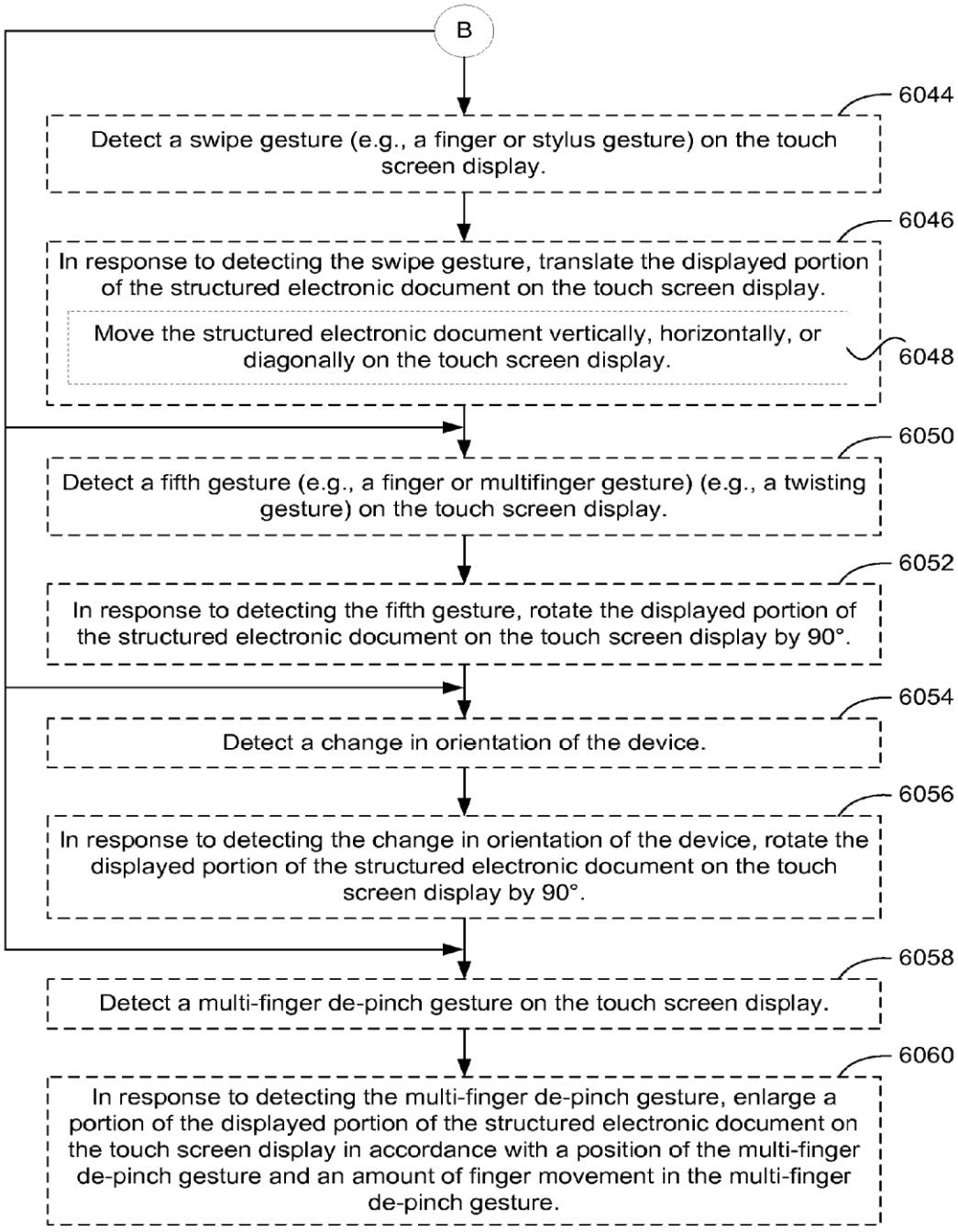

B
6044
Detect a swipe gesture (e.g., a finger or stylus gesture) on the touch screen display.
6046
In response to detecting the swipe gesture, translate the displayed portion of the structured electronic document on the touch screen display.
Move the structured electronic document vertically, horizontally, or diagonally on the touch screen display.
6048
6050
Detect a fifth gesture (e.g., a finger or multifinger gesture) (e.g., a twisting gesture) on the touch screen display.
6052
In response to detecting the fifth gesture, rotate the displayed portion of the structured electronic document on the touch screen display by 90°.
6054
Detect a change in orientation of the device.
6056
In response to detecting the change in orientation of the device, rotate the displayed portion of the structured electronic document on the touch screen display by 90°.
6058
Detect a multi-finger de-pinch gesture on the touch screen display.
6060
In response to detecting the multi-finger de-pinch gesture, enlarge a portion of the displayed portion of the structured electronic document on the touch screen display in accordance with a position of the multi-finger de-pinch gesture and an amount of finger movement in the multi-finger de-pinch gesture.

Figure 6C

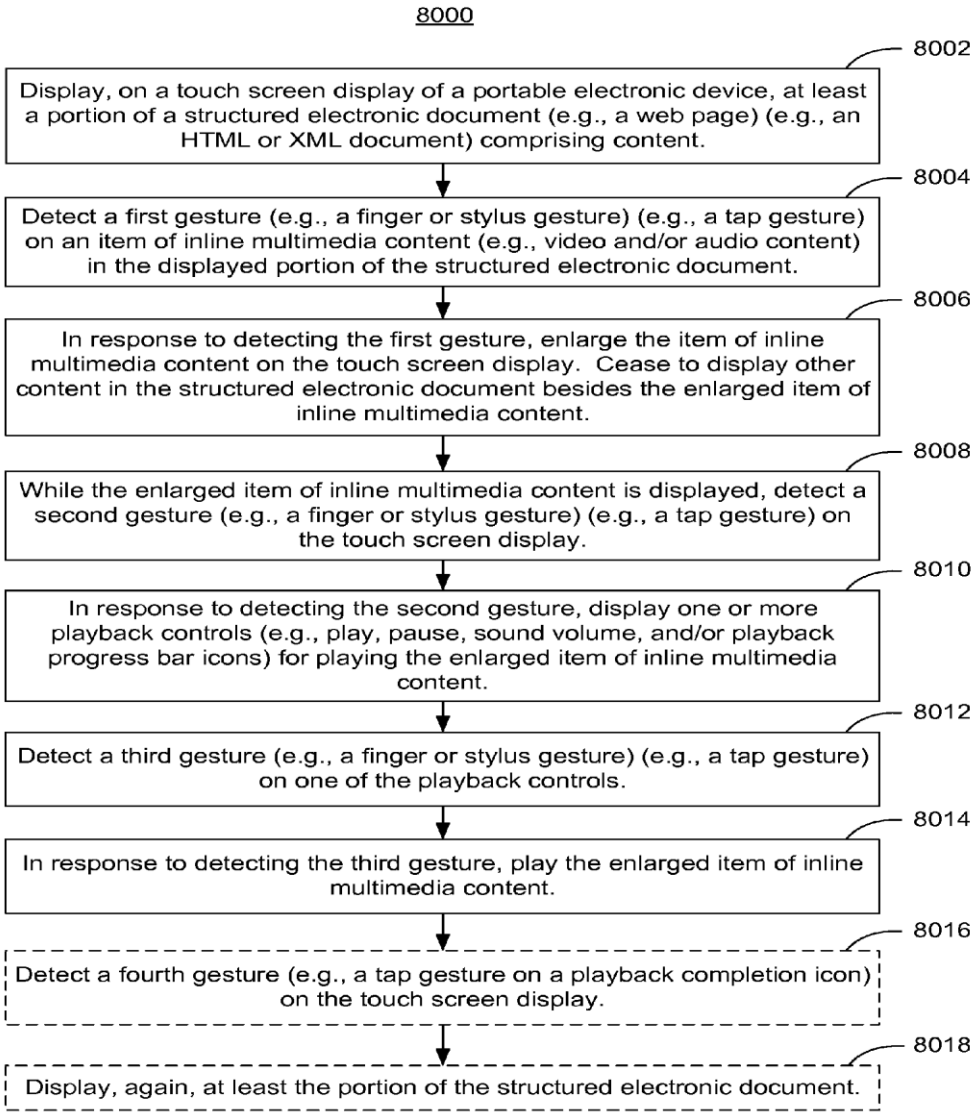

8000
8002
Display, on a touch screen display of a portable electronic device, at least a portion of a structured electronic document (e.g., a web page) (e.g., an HTML or XML document) comprising content.
8004
Detect a first gesture (e.g., a finger or stylus gesture) (e.g., a tap gesture) on an item of inline multimedia content (e.g., video and/or audio content) in the displayed portion of the structured electronic document.
8006
In response to detecting the first gesture, enlarge the item of inline multimedia content on the touch screen display. Cease to display other content in the structured electronic document besides the enlarged item of inline multimedia content.
8008
While the enlarged item of inline multimedia content is displayed, detect a second gesture (e.g., a finger or stylus gesture) (e.g., a tap gesture) on the touch screen display.
8010
In response to detecting the second gesture, display one or more playback controls (e.g., play, pause, sound volume, and/or playback progress bar icons) for playing the enlarged item of inline multimedia content.
8012
Detect a third gesture (e.g., a finger or stylus gesture) (e.g., a tap gesture) on one of the playback controls.
8014
In response to detecting the third gesture, play the enlarged item of inline multimedia content.
8016
Detect a fourth gesture (e.g., a tap gesture on a playback completion icon) on the touch screen display.
8018
Display, again, at least the portion of the structured electronic document.

Figure 8

PORTABLE ELECTRONIC DEVICE, METHOD, AND GRAPHICAL USER INTERFACE FOR DISPLAYING STRUCTURED ELECTRONIC DOCUMENTS

RELATED APPLICATIONS

This application claims priority to U.S. Provisional Patent Application Nos. 60/937,993, "Portable Multifunction Device," filed Jun. 29, 2007; 60/946,715, "Portable Electronic Device, Method, And Graphical User Interface For Displaying Structured Electronic Documents," filed Jun. 27, 2007; 60/879,469, "Portable Multifunction Device," filed Jan. 8, 2007; 60/879,253, "Portable Multifunction Device," filed Jan. 7, 2007; and 60/824,769, "Portable Multifunction Device," filed Sep. 6, 2006. All of these applications are incorporated by referenced herein in their entirety.

This application is related to the following applications: (1) U.S. patent application Ser. No. 10/188,182, "Touch Pad For Handheld Device," filed Jul. 1, 2002; (2) U.S. patent application Ser. No. 10/722,948, "Touch Pad For Handheld Device," filed Nov. 25, 2003; (3) U.S. patent application Ser. No. 10/643,256, "Movable Touch Pad With Added Functionality," filed Aug. 18, 2003; (4) U.S. patent application Ser. No. 10/654,108, "Ambidextrous Mouse," filed Sep. 2, 2003; (5) U.S. patent application Ser. No. 10/840,862, "Multipoint Touchscreen," filed May 6, 2004; (6) U.S. patent application Ser. No. 10/903,964, "Gestures For Touch Sensitive Input Devices," filed Jul. 30, 2004; (7) U.S. patent application Ser. No. 11/038,590, "Mode-Based Graphical User Interfaces For Touch Sensitive Input Devices" filed Jan. 18, 2005; (8) U.S. patent application Ser. No. 11/057,050, "Display Actuator," filed Feb. 11, 2005; (9) U.S. Provisional Patent Application No. 60/658,777, "Multi-Functional Hand-Held Device," filed Mar. 4, 2005; (10) U.S. patent application Ser. No. 11/367,749, "Multi-Functional Hand-Held Device," filed Mar. 3, 2006; and (11) U.S. Provisional Patent Application No. 60/947,155, "Portable Electronic Device, Method, And Graphical User Interface For Displaying Inline Multimedia Content", filed Jun. 29, 2007. All of these applications are incorporated by reference herein in their entirety.

TECHNICAL FIELD

The disclosed embodiments relate generally to portable electronic devices, and more particularly, to portable electronic devices that display structured electronic documents such as web pages on a touch screen display.

BACKGROUND

As portable electronic devices become more compact, and the number of functions performed by a given device increase, it has become a significant challenge to design a user interface that allows users to easily interact with a multifunction device. This challenge is particular significant for handheld portable devices, which have much smaller screens than desktop or laptop computers. This situation is unfortunate because the user interface is the gateway through which users receive not only content but also responses to user actions or behaviors, including user attempts to access a device's features, tools, and functions. Some portable communication devices (e.g., mobile telephones, sometimes called mobile phones, cell phones, cellular telephones, and the like) have resorted to adding more pushbuttons, increasing the density of push buttons, overloading the functions of pushbuttons, or using complex menu systems to allow a user to access, store and manipulate data. These conventional user interfaces often result in complicated key sequences and menu hierarchies that must be memorized by the user.

Many conventional user interfaces, such as those that include physical pushbuttons, are also inflexible. This may prevent a user interface from being configured and/or adapted by either an application running on the portable device or by users. When coupled with the time consuming requirement to memorize multiple key sequences and menu hierarchies, and the difficulty in activating a desired pushbutton, such inflexibility is frustrating to most users.

In particular, it is slow and tedious to navigate in structured electronic documents (e.g., web pages) in portable electronic devices with small screens using conventional input devices (e.g., 5-way toggle switches). Moreover, it is cumbersome to control and view multimedia content within such documents on portable electronic devices.

Accordingly, there is a need for portable electronic devices with more transparent and intuitive user interfaces for viewing and navigating structured electronic documents and multimedia content within such documents. Such interfaces increase the effectiveness, efficiency and user satisfaction with activities like web browsing on portable electronic devices.

SUMMARY

The above deficiencies and other problems associated with user interfaces for portable devices are reduced or eliminated by the disclosed portable multifunction device. In some embodiments, the device has a touch-sensitive display (also known as a "touch screen") with a graphical user interface (GUI), one or more processors, memory and one or more modules, programs or sets of instructions stored in the memory for performing multiple functions. In some embodiments, the user interacts with the GUI primarily through finger contacts and gestures on the touch-sensitive display. In some embodiments, the functions may include telephoning, video conferencing, e-mailing, instant messaging, blogging, digital photographing, digital videoing, web browsing, digital music playing, and/or digital video playing. Instructions for performing these functions may be included in a computer readable storage medium or other computer program product configured for execution by one or more processors.

In one aspect of the invention, a computer-implemented method, for use in conjunction with a portable electronic device with a touch screen display, comprises: displaying at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content; detecting a first gesture at a location on the displayed portion of the structured electronic document; determining a first box in the plurality of boxes at the location of the first gesture; and enlarging and substantially centering the first box on the touch screen display.

In another aspect of the invention, a graphical user interface on a portable electronic device with a touch screen display comprises: at least a portion of a structured electronic document, wherein the structured electronic document comprises a plurality of boxes of content. In response to detecting a first gesture at a location on the portion of the structured electronic document, a first box in the plurality of boxes at the location of the first gesture is determined and the first box is enlarged and substantially centered on the touch screen display.

In another aspect of the invention, a portable electronic device comprises: a touch screen display, one or more pro-

cessors, memory, and one or more programs. The one or more programs are stored in the memory and configured to be executed by the one or more processors. The one or more programs include instructions for displaying at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content. The one or more programs also include: instructions for detecting a first gesture at a location on the displayed portion of the structured electronic document; instructions for determining a first box in the plurality of boxes at the location of the first gesture; and instructions for enlarging and substantially centering the first box on the touch screen display.

In another aspect of the invention, a computer-program product comprises a computer readable storage medium and a computer program mechanism (e.g., one or more computer programs) embedded therein. The computer program mechanism comprises instructions, which when executed by a portable electronic device with a touch screen display, cause the device: to display at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content; to detect a first gesture at a location on the displayed portion of the structured electronic document; to determine a first box in the plurality of boxes at the location of the first gesture; and to enlarge and substantially center the first box on the touch screen display.

In another aspect of the invention, a portable electronic device with a touch screen display comprises: means for displaying at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content; means for detecting a first gesture at a location on the displayed portion of the structured electronic document; means for determining a first box in the plurality of boxes at the location of the first gesture; and means for enlarging and substantially centering the first box on the touch screen display.

The disclosed embodiments allow users to more easily view and navigate structured electronic documents and multimedia content within such documents on portable electronic devices.

BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of the aforementioned embodiments of the invention as well as additional embodiments thereof, reference should be made to the Description of Embodiments below, in conjunction with the following drawings in which like reference numerals refer to corresponding parts throughout the figures.

FIGS. **1**A and **1**B are block diagrams illustrating portable multifunction devices with touch-sensitive displays in accordance with some embodiments.

FIG. **2** illustrates a portable multifunction device having a touch screen in accordance with some embodiments.

FIG. **3** illustrates an exemplary user interface for unlocking a portable electronic device in accordance with some embodiments.

FIGS. **4**A and **4**B illustrate exemplary user interfaces for a menu of applications on a portable multifunction device in accordance with some embodiments.

FIGS. **5**A-**5**M illustrate exemplary user interfaces for a browser in accordance with some embodiments.

FIGS. **6**A-**6**C are flow diagrams illustrating a process for displaying structured electronic documents such as web pages on a portable electronic device with a touch screen display in accordance with some embodiments.

FIGS. **7**A-**7**F illustrate exemplary user interfaces for playing an item of inline multimedia content in accordance with some embodiments.

FIG. **8** is a flow diagram illustrating a process for displaying inline multimedia content on a portable electronic device with a touch screen display in accordance with some embodiments.

DESCRIPTION OF EMBODIMENTS

Reference will now be made in detail to embodiments, examples of which are illustrated in the accompanying drawings. In the following detailed description, numerous specific details are set forth in order to provide a thorough understanding of the present invention. However, it will be apparent to one of ordinary skill in the art that the present invention may be practiced without these specific details. In other instances, well-known methods, procedures, components, circuits, and networks have not been described in detail so as not to unnecessarily obscure aspects of the embodiments.

It will also be understood that, although the terms first, second, etc. may be used herein to describe various elements, these elements should not be limited by these terms. These terms are only used to distinguish one element from another. For example, a first gesture could be termed a second gesture, and, similarly, a second gesture could be termed a first gesture, without departing from the scope of the present invention.

The terminology used in the description of the invention herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention. As used in the description of the invention and the appended claims, the singular forms "a", "an" and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will also be understood that the term "and/or" as used herein refers to and encompasses any and all possible combinations of one or more of the associated listed items. It will be further understood that the terms "comprises" and/or "comprising," when used in this specification, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.

Embodiments of a portable multifunction device, user interfaces for such devices, and associated processes for using such devices are described. In some embodiments, the device is a portable communications device such as a mobile telephone that also contains other functions, such as PDA and/or music player functions.

The user interface may include a physical click wheel in addition to a touch screen or a virtual click wheel displayed on the touch screen. A click wheel is a user-interface device that may provide navigation commands based on an angular displacement of the wheel or a point of contact with the wheel by a user of the device. A click wheel may also be used to provide a user command corresponding to selection of one or more items, for example, when the user of the device presses down on at least a portion of the wheel or the center of the wheel. Alternatively, breaking contact with a click wheel image on a touch screen surface may indicate a user command corresponding to selection. For simplicity, in the discussion that follows, a portable multifunction device that includes a touch screen is used as an exemplary embodiment. It should be understood, however, that some of the user interfaces and associated processes may be applied to other devices, such as

personal computers and laptop computers, which may include one or more other physical user-interface devices, such as a physical click wheel, a physical keyboard, a mouse and/or a joystick.

The device supports a variety of applications, such as one or more of the following: a telephone application, a video conferencing application, an e-mail application, an instant messaging application, a blogging application, a photo management application, a digital camera application, a digital video camera application, a web browsing application, a digital music player application, and/or a digital video player application.

The various applications that may be executed on the device may use at least one common physical user-interface device, such as the touch screen. One or more functions of the touch screen as well as corresponding information displayed on the device may be adjusted and/or varied from one application to the next and/or within a respective application. In this way, a common physical architecture (such as the touch screen) of the device may support the variety of applications with user interfaces that are intuitive and transparent.

The user interfaces may include one or more soft keyboard embodiments. The soft keyboard embodiments may include standard (QWERTY) and/or non-standard configurations of symbols on the displayed icons of the keyboard, such as those described in U.S. patent application Ser. Nos. 11/459,606, "Keyboards For Portable Electronic Devices," filed Jul. 24, 2006, and 11/459,615, "Touch Screen Keyboards For Portable Electronic Devices," filed Jul. 24, 2006, the contents of which are hereby incorporated by reference. The keyboard embodiments may include a reduced number of icons (or soft keys) relative to the number of keys in existing physical keyboards, such as that for a typewriter. This may make it easier for users to select one or more icons in the keyboard, and thus, one or more corresponding symbols. The keyboard embodiments may be adaptive. For example, displayed icons may be modified in accordance with user actions, such as selecting one or more icons and/or one or more corresponding symbols. One or more applications on the portable device may utilize common and/or different keyboard embodiments. Thus, the keyboard embodiment used may be tailored to at least some of the applications. In some embodiments, one or more keyboard embodiments may be tailored to a respective user. For example, one or more keyboard embodiments may be tailored to a respective user based on a word usage history (lexicography, slang, individual usage) of the respective user. Some of the keyboard embodiments may be adjusted to reduce a probability of a user error when selecting one or more icons, and thus one or more symbols, when using the soft keyboard embodiments.

Attention is now directed towards embodiments of the device. FIGS. **1**A and **1**B are block diagrams illustrating portable multifunction devices **100** with touch-sensitive displays **112** in accordance with some embodiments. The touch-sensitive display **112** is sometimes called a "touch screen" for convenience, and may also be known as or called a touch-sensitive display system. The device **100** may include a memory **102** (which may include one or more computer readable storage mediums), a memory controller **122**, one or more processing units (CPU's) **120**, a peripherals interface **118**, RF circuitry **108**, audio circuitry **110**, a speaker **111**, a microphone **113**, an input/output (I/O) subsystem **106**, other input or control devices **116**, and an external port **124**. The device **100** may include one or more optical sensors **164**. These components may communicate over one or more communication buses or signal lines **103**.

It should be appreciated that the device **100** is only one example of a portable multifunction device **100**, and that the device **100** may have more or fewer components than shown, may combine two or more components, or a may have a different configuration or arrangement of the components. The various components shown in FIGS. **1**A and **1**B may be implemented in hardware, software or a combination of both hardware and software, including one or more signal processing and/or application specific integrated circuits.

Memory **102** may include high-speed random access memory and may also include non-volatile memory, such as one or more magnetic disk storage devices, flash memory devices, or other non-volatile solid-state memory devices. Access to memory **102** by other components of the device **100**, such as the CPU **120** and the peripherals interface **118**, may be controlled by the memory controller **122**.

The peripherals interface **118** couples the input and output peripherals of the device to the CPU **120** and memory **102**. The one or more processors **120** run or execute various software programs and/or sets of instructions stored in memory **102** to perform various functions for the device **100** and to process data.

In some embodiments, the peripherals interface **118**, the CPU **120**, and the memory controller **122** may be implemented on a single chip, such as a chip **104**. In some other embodiments, they may be implemented on separate chips.

The RF (radio frequency) circuitry **108** receives and sends RF signals, also called electromagnetic signals. The RF circuitry **108** converts electrical signals to/from electromagnetic signals and communicates with communications networks and other communications devices via the electromagnetic signals. The RF circuitry **108** may include well-known circuitry for performing these functions, including but not limited to an antenna system, an RF transceiver, one or more amplifiers, a tuner, one or more oscillators, a digital signal processor, a CODEC chipset, a subscriber identity module (SIM) card, memory, and so forth. The RF circuitry **108** may communicate with networks, such as the Internet, also referred to as the World Wide Web (WWW), an intranet and/or a wireless network, such as a cellular telephone network, a wireless local area network (LAN) and/or a metropolitan area network (MAN), and other devices by wireless communication. The wireless communication may use any of a plurality of communications standards, protocols and technologies, including but not limited to Global System for Mobile Communications (GSM), Enhanced Data GSM Environment (EDGE), wideband code division multiple access (W-CDMA), code division multiple access (CDMA), time division multiple access (TDMA), Bluetooth, Wireless Fidelity (Wi-Fi) (e.g., IEEE 802.11a, IEEE 802.11b, IEEE 802.11g and/or IEEE 802.11n), voice over Internet Protocol (VoIP), Wi-MAX, a protocol for email (e.g., Internet message access protocol (IMAP) and/or post office protocol (POP)), instant messaging (e.g., extensible messaging and presence protocol (XMPP), Session Initiation Protocol for Instant Messaging and Presence Leveraging Extensions (SIMPLE), and/or Instant Messaging and Presence Service (IMPS)), and/or Short Message Service (SMS)), or any other suitable communication protocol, including communication protocols not yet developed as of the filing date of this document.

The audio circuitry **110**, the speaker **111**, and the microphone **113** provide an audio interface between a user and the device **100**. The audio circuitry **110** receives audio data from the peripherals interface **118**, converts the audio data to an electrical signal, and transmits the electrical signal to the speaker **111**. The speaker **111** converts the electrical signal to human-audible sound waves. The audio circuitry **110** also

receives electrical signals converted by the microphone **113** from sound waves. The audio circuitry **110** converts the electrical signal to audio data and transmits the audio data to the peripherals interface **118** for processing. Audio data may be retrieved from and/or transmitted to memory **102** and/or the RF circuitry **108** by the peripherals interface **118**. In some embodiments, the audio circuitry **110** also includes a headset jack (e.g. **212**, FIG. **2**). The headset jack provides an interface between the audio circuitry **110** and removable audio input/output peripherals, such as output-only headphones or a headset with both output (e.g., a headphone for one or both ears) and input (e.g., a microphone).

The I/O subsystem **106** couples input/output peripherals on the device **100**, such as the touch screen **112** and other input/control devices **116**, to the peripherals interface **118**. The I/O subsystem **106** may include a display controller **156** and one or more input controllers **160** for other input or control devices. The one or more input controllers **160** receive/send electrical signals from/to other input or control devices **116**. The other input/control devices **116** may include physical buttons (e.g., push buttons, rocker buttons, etc.), dials, slider switches, joysticks, click wheels, and so forth. In some alternate embodiments, input controller(s) **160** may be coupled to any (or none) of the following: a keyboard, infrared port, USB port, and a pointer device such as a mouse. The one or more buttons (e.g., **208**, FIG. **2**) may include an up/down button for volume control of the speaker **111** and/or the microphone **113**. The one or more buttons may include a push button (e.g., **206**, FIG. **2**). A quick press of the push button may disengage a lock of the touch screen **112** or begin a process that uses gestures on the touch screen to unlock the device, as described in U.S. patent application Ser. No. 11/322,549, "Unlocking a Device by Performing Gestures on an Unlock Image," filed Dec. 23, 2005, which is hereby incorporated by reference. A longer press of the push button (e.g., **206**) may turn power to the device **100** on or off. The user may be able to customize a functionality of one or more of the buttons. The touch screen **112** is used to implement virtual or soft buttons and one or more soft keyboards.

The touch-sensitive touch screen **112** provides an input interface and an output interface between the device and a user. The display controller **156** receives and/or sends electrical signals from/to the touch screen **112**. The touch screen **112** displays visual output to the user. The visual output may include graphics, text, icons, video, and any combination thereof (collectively termed "graphics"). In some embodiments, some or all of the visual output may correspond to user-interface objects, further details of which are described below.

A touch screen **112** has a touch-sensitive surface, sensor or set of sensors that accepts input from the user based on haptic and/or tactile contact. The touch screen **112** and the display controller **156** (along with any associated modules and/or sets of instructions in memory **102**) detect contact (and any movement or breaking of the contact) on the touch screen **112** and converts the detected contact into interaction with user-interface objects (e.g., one or more soft keys, icons, web pages or images) that are displayed on the touch screen. In an exemplary embodiment, a point of contact between a touch screen **112** and the user corresponds to a finger of the user.

The touch screen **112** may use LCD (liquid crystal display) technology, or LPD (light emitting polymer display) technology, although other display technologies may be used in other embodiments. The touch screen **112** and the display controller **156** may detect contact and any movement or breaking thereof using any of a plurality of touch sensing technologies now known or later developed, including but not limited to capacitive, resistive, infrared, and surface acoustic wave technologies, as well as other proximity sensor arrays or other elements for determining one or more points of contact with a touch screen **112**.

A touch-sensitive display in some embodiments of the touch screen **112** may be analogous to the multi-touch sensitive tablets described in the following U.S. Pat. Nos. 6,323,846 (Westerman et al.), 6,570,557 (Westerman et al.), and/or 6,677,932 (Westerman), and/or U.S. Patent Publication 2002/0015024A1, each of which is hereby incorporated by reference. However, a touch screen **112** displays visual output from the portable device **100**, whereas touch sensitive tablets do not provide visual output.

A touch-sensitive display in some embodiments of the touch screen **112** may be as described in the following applications: (1) U.S. patent application Ser. No. 11/381,313, "Multipoint Touch Surface Controller," filed May 2, 2006; (2) U.S. patent application Ser. No. 10/840,862, "Multipoint Touchscreen," filed May 6, 2004; (3) U.S. patent application Ser. No. 10/903,964, "Gestures For Touch Sensitive Input Devices," filed Jul. 30, 2004; (4) U.S. patent application Ser. No. 11/048,264, "Gestures For Touch Sensitive Input Devices," filed Jan. 31, 2005; (5) U.S. patent application Ser. No. 11/038,590, "Mode-Based Graphical User Interfaces For Touch Sensitive Input Devices," filed Jan. 18, 2005; (6) U.S. patent application Ser. No. 11/228,758, "Virtual Input Device Placement On A Touch Screen User Interface," filed Sep. 16, 2005; (7) U.S. patent application Ser. No. 11/228,700, "Operation Of A Computer With A Touch Screen Interface," filed Sep. 16, 2005; (8) U.S. patent application Ser. No. 11/228,737, "Activating Virtual Keys Of A Touch-Screen Virtual Keyboard," filed Sep. 16, 2005; and (9) U.S. patent application Ser. No. 11/367,749, "Multi-Functional Hand-Held Device," filed Mar. 3, 2006. All of these applications are incorporated by reference herein.

The touch screen **112** may have a resolution in excess of 100 dpi. In an exemplary embodiment, the touch screen has a resolution of approximately 160 dpi. The user may make contact with the touch screen **112** using any suitable object or appendage, such as a stylus, a finger, and so forth. In some embodiments, the user interface is designed to work primarily with finger-based contacts and gestures, which are much less precise than stylus-based input due to the larger area of contact of a finger on the touch screen. In some embodiments, the device translates the rough finger-based input into a precise pointer/cursor position or command for performing the actions desired by the user.

In some embodiments, in addition to the touch screen, the device **100** may include a touchpad (not shown) for activating or deactivating particular functions. In some embodiments, the touchpad is a touch-sensitive area of the device that, unlike the touch screen, does not display visual output. The touchpad may be a touch-sensitive surface that is separate from the touch screen **112** or an extension of the touch-sensitive surface formed by the touch screen.

In some embodiments, the device **100** may include a physical or virtual click wheel as an input control device **116**. A user may navigate among and interact with one or more graphical objects (henceforth referred to as icons) displayed in the touch screen **112** by rotating the click wheel or by moving a point of contact with the click wheel (e.g., where the amount of movement of the point of contact is measured by its angular displacement with respect to a center point of the click wheel). The click wheel may also be used to select one or more of the displayed icons. For example, the user may press down on at least a portion of the click wheel or an associated button. User commands and navigation commands

provided by the user via the click wheel may be processed by an input controller **160** as well as one or more of the modules and/or sets of instructions in memory **102**. For a virtual click wheel, the click wheel and click wheel controller may be part of the touch screen **112** and the display controller **156**, respectively. For a virtual click wheel, the click wheel may be either an opaque or semitransparent object that appears and disappears on the touch screen display in response to user interaction with the device. In some embodiments, a virtual click wheel is displayed on the touch screen of a portable multifunction device and operated by user contact with the touch screen.

The device **100** also includes a power system **162** for powering the various components. The power system **162** may include a power management system, one or more power sources (e.g., battery, alternating current (AC)), a recharging system, a power failure detection circuit, a power converter or inverter, a power status indicator (e.g., a light-emitting diode (LED)) and any other components associated with the generation, management and distribution of power in portable devices.

The device **100** may also include one or more optical sensors **164**. FIGS. **1**A and **1**B show an optical sensor coupled to an optical sensor controller **158** in I/O subsystem **106**. The optical sensor **164** may include charge-coupled device (CCD) or complementary metal-oxide semiconductor (CMOS) phototransistors. The optical sensor **164** receives light from the environment, projected through one or more lens, and converts the light to data representing an image. In conjunction with an imaging module **143** (also called a camera module), the optical sensor **164** may capture still images or video. In some embodiments, an optical sensor is located on the back of the device **100**, opposite the touch screen display **112** on the front of the device, so that the touch screen display may be used as a viewfinder for either still and/or video image acquisition. In some embodiments, an optical sensor is located on the front of the device so that the user's image may be obtained for videoconferencing while the user views the other video conference participants on the touch screen display. In some embodiments, the position of the optical sensor **164** can be changed by the user (e.g., by rotating the lens and the sensor in the device housing) so that a single optical sensor **164** may be used along with the touch screen display for both video conferencing and still and/or video image acquisition.

The device **100** may also include one or more proximity sensors **166**. FIGS. **1**A and **1**B show a proximity sensor **166** coupled to the peripherals interface **118**. Alternately, the proximity sensor **166** may be coupled to an input controller **160** in the I/O subsystem **106**. The proximity sensor **166** may perform as described in U.S. patent application Ser. No. 11/241,839, "Proximity Detector In Handheld Device," filed Sep. 30, 2005; Ser. No. 11/240,788, "Proximity Detector In Handheld Device," filed Sep. 30, 2005; Ser. No. 11/620,702, filed Jan. 7, 2007, "Using Ambient Light Sensor To Augment Proximity Sensor Output," Ser. No. 11/586,862, filed Oct. 24, 2006, "Automated Response To And Sensing Of User Activity In Portable Devices," and Ser. No. 11/638,251, filed Dec. 12, 2006, "Methods And Systems For Automatic Configuration Of Peripherals," which are hereby incorporated by reference. In some embodiments, the proximity sensor turns off and disables the touch screen **112** when the multifunction device is placed near the user's ear (e.g., when the user is making a phone call). In some embodiments, the proximity sensor keeps the screen off when the device is in the user's pocket, purse, or other dark area to prevent unnecessary battery drainage when the device is a locked state.

The device **100** may also include one or more accelerometers **168**. FIGS. **1**A and **1**B show an accelerometer **168** coupled to the peripherals interface **118**. Alternately, the accelerometer **168** may be coupled to an input controller **160** in the I/O subsystem **106**. The accelerometer **168** may perform as described in U.S. Patent Publication No. 20050190059, "Acceleration-based Theft Detection System for Portable Electronic Devices," and U.S. Patent Publication No. 20060017692, "Methods And Apparatuses For Operating A Portable Device Based On An Accelerometer," both of which are which are incorporated herein by reference. In some embodiments, information is displayed on the touch screen display in a portrait view or a landscape view based on an analysis of data received from the one or more accelerometers.

In some embodiments, the software components stored in memory **102** may include an operating system **126**, a communication module (or set of instructions) **128**, a contact/motion module (or set of instructions) **130**, a graphics module (or set of instructions) **132**, a text input module (or set of instructions) **134**, a Global Positioning System (GPS) module (or set of instructions) **135**, and applications (or set of instructions) **136**.

The operating system **126** (e.g., Darwin, RTXC, LINUX, UNIX, OS X, WINDOWS, or an embedded operating system such as VxWorks) includes various software components and/or drivers for controlling and managing general system tasks (e.g., memory management, storage device control, power management, etc.) and facilitates communication between various hardware and software components.

The communication module **128** facilitates communication with other devices over one or more external ports **124** and also includes various software components for handling data received by the RF circuitry **108** and/or the external port **124**. The external port **124** (e.g., Universal Serial Bus (USB), FIREWIRE, etc.) is adapted for coupling directly to other devices or indirectly over a network (e.g., the Internet, wireless LAN, etc.). In some embodiments, the external port is a multi-pin (e.g., 30-pin) connector that is the same as, or similar to and/or compatible with the 30-pin connector used on iPod (trademark of Apple Computer, Inc.) devices.

The contact/motion module **130** may detect contact with the touch screen **112** (in conjunction with the display controller **156**) and other touch sensitive devices (e.g., a touchpad or physical click wheel). The contact/motion module **130** includes various software components for performing various operations related to detection of contact, such as determining if contact has occurred, determining if there is movement of the contact and tracking the movement across the touch screen **112**, and determining if the contact has been broken (i.e., if the contact has ceased). Determining movement of the point of contact may include determining speed (magnitude), velocity (magnitude and direction), and/or an acceleration (a change in magnitude and/or direction) of the point of contact. These operations may be applied to single contacts (e.g., one finger contacts) or to multiple simultaneous contacts (e.g., "multitouch"/multiple finger contacts). In some embodiments, the contact/motion module **130** and the display controller **156** also detects contact on a touchpad. In some embodiments, the contact/motion module **130** and the controller **160** detects contact on a click wheel.

The graphics module **132** includes various known software components for rendering and displaying graphics on the touch screen **112**, including components for changing the intensity of graphics that are displayed. As used herein, the term "graphics" includes any object that can be displayed to a user, including without limitation text, web pages, icons

(such as user-interface objects including soft keys), digital images, videos, animations and the like.

The text input module **134**, which may be a component of graphics module **132**, provides soft keyboards for entering text in various applications (e.g., contacts **137**, e-mail **140**, IM **141**, blogging **142**, browser **147**, and any other application that needs text input).

The GPS module **135** determines the location of the device and provides this information for use in various applications (e.g., to telephone **138** for use in location-based dialing, to camera **143** and/or blogger **142** as picture/video metadata, and to applications that provide location-based services such as weather widgets, local yellow page widgets, and map/navigation widgets).

The applications **136** may include the following modules (or sets of instructions), or a subset or superset thereof:

- a contacts module **137** (sometimes called an address book or contact list);
- a telephone module **138**;
- a video conferencing module **139**;
- an e-mail client module **140**;
- an instant messaging (IM) module **141**;
- a blogging module **142**;
- a camera module **143** for still and/or video images;
- an image management module **144**;
- a video player module **145**;
- a music player module **146**;
- a browser module **147**;
- a calendar module **148**;
- widget modules **149**, which may include weather widget **149-1**, stocks widget **149-2**, calculator widget **149-3**, alarm clock widget **149-4**, dictionary widget **149-5**, and other widgets obtained by the user, as well as user-created widgets **149-6**;
- widget creator module **150** for making user-created widgets **149-6**;
- search module **151**;
- video and music player module **152**, which merges video player module **145** and music player module **146**;
- notes module **153**; and/or map module **154**.

Examples of other applications **136** that may be stored in memory **102** include other word processing applications, JAVA-enabled applications, encryption, digital rights management, voice recognition, and voice replication.

In conjunction with touch screen **112**, display controller **156**, contact module **130**, graphics module **132**, and text input module **134**, the contacts module **137** may be used to manage an address book or contact list, including: adding name(s) to the address book; deleting name(s) from the address book; associating telephone number(s), e-mail address(es), physical address(es) or other information with a name; associating an image with a name; categorizing and sorting names; providing telephone numbers or e-mail addresses to initiate and/or facilitate communications by telephone **138**, video conference **139**, e-mail **140**, or IM **141**; and so forth.

In conjunction with RF circuitry **108**, audio circuitry **110**, speaker **111**, microphone **113**, touch screen **112**, display controller **156**, contact module **130**, graphics module **132**, and text input module **134**, the telephone module **138** may be used to enter a sequence of characters corresponding to a telephone number, access one or more telephone numbers in the address book **137**, modify a telephone number that has been entered, dial a respective telephone number, conduct a conversation and disconnect or hang up when the conversation is completed. As noted above, the wireless communication may use any of a plurality of communications standards, protocols and technologies.

In conjunction with RF circuitry **108**, audio circuitry **110**, speaker **111**, microphone **113**, touch screen **112**, display controller **156**, optical sensor **164**, optical sensor controller **158**, contact module **130**, graphics module **132**, text input module **134**, contact list **137**, and telephone module **138**, the video-conferencing module **139** may be used to initiate, conduct, and terminate a video conference between a user and one or more other participants.

In conjunction with RF circuitry **108**, touch screen **112**, display controller **156**, contact module **130**, graphics module **132**, and text input module **134**, the e-mail client module **140** may be used to create, send, receive, and manage e-mail. In conjunction with image management module **144**, the e-mail module **140** makes it very easy to create and send e-mails with still or video images taken with camera module **143**.

In conjunction with RF circuitry **108**, touch screen **112**, display controller **156**, contact module **130**, graphics module **132**, and text input module **134**, the instant messaging module **141** may be used to enter a sequence of characters corresponding to an instant message, to modify previously entered characters, to transmit a respective instant message (for example, using a Short Message Service (SMS) or Multimedia Message Service (MMS) protocol for telephony-based instant messages or using XMPP, SIMPLE, or IMPS for Internet-based instant messages), to receive instant messages and to view received instant messages. In some embodiments, transmitted and/or received instant messages may include graphics, photos, audio files, video files and/or other attachments as are supported in a MMS and/or an Enhanced Messaging Service (EMS). As used herein, "instant messaging" refers to both telephony-based messages (e.g., messages sent using SMS or MMS) and Internet-based messages (e.g., messages sent using XMPP, SIMPLE, or IMPS).

In conjunction with RF circuitry **108**, touch screen **112**, display controller **156**, contact module **130**, graphics module **132**, text input module **134**, image management module **144**, and browsing module **147**, the blogging module **142** may be used to send text, still images, video, and/or other graphics to a blog (e.g., the user's blog).

In conjunction with touch screen **112**, display controller **156**, optical sensor(s) **164**, optical sensor controller **158**, contact module **130**, graphics module **132**, and image management module **144**, the camera module **143** may be used to capture still images or video (including a video stream) and store them into memory **102**, modify characteristics of a still image or video, or delete a still image or video from memory **102**.

In conjunction with touch screen **112**, display controller **156**, contact module **130**, graphics module **132**, text input module **134**, and camera module **143**, the image management module **144** may be used to arrange, modify or otherwise manipulate, label, delete, present (e.g., in a digital slide show or album), and store still and/or video images.

In conjunction with touch screen **112**, display controller **156**, contact module **130**, graphics module **132**, audio circuitry **110**, and speaker **111**, the video player module **145** may be used to display, present or otherwise play back videos (e.g., on the touch screen or on an external, connected display via external port **124**).

In conjunction with touch screen **112**, display system controller **156**, contact module **130**, graphics module **132**, audio circuitry **110**, speaker **111**, RF circuitry **108**, and browser module **147**, the music player module **146** allows the user to download and play back recorded music and other sound files stored in one or more file formats, such as MP3 or AAC files.

In some embodiments, the device **100** may include the functionality of an MP3 player, such as an iPod (trademark of Apple Computer, Inc.).

In conjunction with RF circuitry **108**, touch screen **112**, display system controller **156**, contact module **130**, graphics module **132**, and text input module **134**, the browser module **147** may be used to browse the Internet, including searching, linking to, receiving, and displaying web pages or portions thereof, as well as attachments and other files linked to web pages. Embodiments of user interfaces and associated processes using browser module **147** are described further below.

In conjunction with RF circuitry **108**, touch screen **112**, display system controller **156**, contact module **130**, graphics module **132**, text input module **134**, e-mail module **140**, and browser module **147**, the calendar module **148** may be used to create, display, modify, and store calendars and data associated with calendars (e.g., calendar entries, to do lists, etc.).

In conjunction with RF circuitry **108**, touch screen **112**, display system controller **156**, contact module **130**, graphics module **132**, text input module **134**, and browser module **147**, the widget modules **149** are mini-applications that may be downloaded and used by a user (e.g., weather widget **149-1**, stocks widget **149-2**, calculator widget **149-3**, alarm clock widget **149-4**, and dictionary widget **149-5**) or created by the user (e.g., user-created widget **149-6**). In some embodiments, a widget includes an HTML (Hypertext Markup Language) file, a CSS (Cascading Style Sheets) file, and a JavaScript file. In some embodiments, a widget includes an XML (Extensible Markup Language) file and a JavaScript file (e.g., Yahoo! Widgets).

In conjunction with RF circuitry **108**, touch screen **112**, display system controller **156**, contact module **130**, graphics module **132**, text input module **134**, and browser module **147**, the widget creator module **150** may be used by a user to create widgets (e.g., turning a user-specified portion of a web page into a widget).

In conjunction with touch screen **112**, display system controller **156**, contact module **130**, graphics module **132**, and text input module **134**, the search module **151** may be used to search for text, music, sound, image, video, and/or other files in memory **102** that match one or more search criteria (e.g., one or more user-specified search terms).

In conjunction with touch screen **112**, display controller **156**, contact module **130**, graphics module **132**, and text input module **134**, the notes module **153** may be used to create and manage notes, to do lists, and the like.

In conjunction with RF circuitry **108**, touch screen **112**, display system controller **156**, contact module **130**, graphics module **132**, text input module **134**, GPS module **135**, and browser module **147**, the map module **154** may be used to receive, display, modify, and store maps and data associated with maps (e.g., driving directions; data on stores and other points of interest at or near a particular location; and other location-based data).

Each of the above identified modules and applications correspond to a set of instructions for performing one or more functions described above. These modules (i.e., sets of instructions) need not be implemented as separate software programs, procedures or modules, and thus various subsets of these modules may be combined or otherwise re-arranged in various embodiments. For example, video player module **145** may be combined with music player module **146** into a single module (e.g., video and music player module **152**, FIG. **1**B). In some embodiments, memory **102** may store a subset of the modules and data structures identified above. Furthermore, memory **102** may store additional modules and data structures not described above.

In some embodiments, the device **100** is a device where operation of a predefined set of functions on the device is performed exclusively through a touch screen **112** and/or a touchpad. By using a touch screen and/or a touchpad as the primary input/control device for operation of the device **100**, the number of physical input/control devices (such as push buttons, dials, and the like) on the device **100** may be reduced.

The predefined set of functions that may be performed exclusively through a touch screen and/or a touchpad include navigation between user interfaces. In some embodiments, the touchpad, when touched by the user, navigates the device **100** to a main, home, or root menu from any user interface that may be displayed on the device **100**. In such embodiments, the touchpad may be referred to as a "menu button." In some other embodiments, the menu button may be a physical push button or other physical input/control device instead of a touchpad.

FIG. **2** illustrates a portable multifunction device **100** having a touch screen **112** in accordance with some embodiments. The touch screen may display one or more graphics within user interface (UI) **200**. In this embodiment, as well as others described below, a user may select one or more of the graphics by making contact or touching the graphics, for example, with one or more fingers **202** (not drawn to scale in the figure). In some embodiments, selection of one or more graphics occurs when the user breaks contact with the one or more graphics. In some embodiments, the contact may include a gesture, such as one or more taps, one or more swipes (from left to right, right to left, upward and/or downward) and/or a rolling of a finger (from right to left, left to right, upward and/or downward) that has made contact with the device **100**. In some embodiments, inadvertent contact with a graphic may not select the graphic. For example, a swipe gesture that sweeps over an application icon may not select the corresponding application when the gesture corresponding to selection is a tap.

The device **100** may also include one or more physical buttons, such as "home" or menu button **204**. As described previously, the menu button **204** may be used to navigate to any application **136** in a set of applications that may be executed on the device **100**. Alternatively, in some embodiments, the menu button is implemented as a soft key in a GUI in touch screen **112**.

In one embodiment, the device **100** includes a touch screen **112**, a menu button **204**, a push button **206** for powering the device on/off and locking the device, volume adjustment button(s) **208**, a Subscriber Identity Module (SIM) card slot **210**, a head set jack **212**, and a docking/charging external port **124**. The push button **206** may be used to turn the power on/off on the device by depressing the button and holding the button in the depressed state for a predefined time interval; to lock the device by depressing the button and releasing the button before the predefined time interval has elapsed; and/or to unlock the device or initiate an unlock process. In an alternative embodiment, the device **100** also may accept verbal input for activation or deactivation of some functions through the microphone **113**.

Attention is now directed towards embodiments of user interfaces ("UI") and associated processes that may be implemented on a portable multifunction device **100**.

FIG. **3** illustrates an exemplary user interface for unlocking a portable electronic device in accordance with some embodiments. In some embodiments, user interface **300** includes the following elements, or a subset or superset thereof:

- Unlock image **302** that is moved with a finger gesture to unlock the device;
- Arrow **304** that provides a visual cue to the unlock gesture;

Channel **306** that provides additional cues to the unlock gesture;
Time **308**;
Day **310**;
Date **312**; and
Wallpaper image **314**.

In some embodiments, the device detects contact with the touch-sensitive display (e.g., a user's finger making contact on or near the unlock image **302**) while the device is in a user-interface lock state. The device moves the unlock image **302** in accordance with the contact. The device transitions to a user-interface unlock state if the detected contact corresponds to a predefined gesture, such as moving the unlock image across channel **306**.

Conversely, the device maintains the user-interface lock state if the detected contact does not correspond to the predefined gesture. As noted above, processes that use gestures on the touch screen to unlock the device are described in U.S. patent application Ser. Nos. 11/322,549, "Unlocking A Device By Performing Gestures On An Unlock Image," filed Dec. 23, 2005, and 11/322,550, "Indication Of Progress Towards Satisfaction Of A User Input Condition," filed Dec. 23, 2005, which are hereby incorporated by reference.

FIGS. **4**A and **4**B illustrate exemplary user interfaces for a menu of applications on a portable multifunction device in accordance with some embodiments. In some embodiments, user interface **400**A includes the following elements, or a subset or superset thereof:

Signal strength indicator(s) **402** for wireless communication(s), such as cellular and Wi-Fi signals;
Time **404**;
Battery status indicator **406**;
Tray **408** with icons for frequently used applications, such as one or more of the following:
Phone **138**, which may include an indicator **414** of the number of missed calls or voicemail messages;
E-mail client **140**, which may include an indicator **410** of the number of unread e-mails;
Browser **147**; and
Music player **146**; and
Icons for other applications, such as one or more of the following:
IM **141**;
Image management **144**;
Camera **143**;
Video player **145**;
Weather **149-1**;
Stocks **149-2**;
Blog **142**;
Calendar **148**;
Calculator **149-3**;
Alarm clock **149-4**;
Dictionary **149-5**; and
User-created widget **149-6**.

In some embodiments, user interface **400**B includes the following elements, or a subset or superset thereof:

402, **404**, **406**, **141**, **148**, **144**, **143**, **149-3**, **149-2**, **149-1**, **149-4**, **410**, **414**, **138**, **140**, and **147**, as described above;
Map **154**;
Notes **153**;
Settings **412**, which provides access to settings for the device **100** and its various applications **136**, as described further below; and
Video and music player module **152**, also referred to as iPod (trademark of Apple Computer, Inc.) module **152**.

In some embodiments, UI **400**A or **400**B displays all of the available applications **136** on one screen so that there is no need to scroll through a list of applications (e.g., via a scroll bar). In some embodiments, as the number of applications increase, the icons corresponding to the applications may decrease in size so that all applications may be displayed on a single screen without scrolling. In some embodiments, having all applications on one screen and a menu button enables a user to access any desired application with at most two inputs, such as activating the menu button **204** and then activating the desired application (e.g., by a tap or other finger gesture on the icon corresponding to the application).

FIGS. **5**A-**5**M illustrate exemplary user interfaces for a browser in accordance with some embodiments.

In some embodiments, user interfaces **3900**A-**3900**M (in FIGS. **5**A-**5**M, respectively) include the following elements, or a subset or superset thereof:

402, **404**, and **406**, as described above;
Previous page icon **3902** that when activated (e.g., by a finger tap on the icon) initiates display of the previous web page;
Web page name **3904**;
Next page icon **3906** that when activated (e.g., by a finger tap on the icon) initiates display of the next web page;
URL (Uniform Resource Locator) entry box **3908** for inputting URLs of web pages;
Refresh icon **3910** that when activated (e.g., by a finger tap on the icon) initiates a refresh of the web page;
Web page **3912** or other structured document, which is made of blocks **3914** of text content and other graphics (e.g., images and inline multimedia);
Settings icon **3916** that when activated (e.g., by a finger tap on the icon) initiates display of a settings menu for the browser;
Bookmarks icon **3918** that when activated (e.g., by a finger tap on the icon) initiates display of a bookmarks list or menu for the browser;
Add bookmark icon **3920** that when activated (e.g., by a finger tap on the icon) initiates display of a UI for adding bookmarks (e.g., UI **3900**F, FIG. **5**F, which like other UIs and pages, can be displayed in either portrait or landscape view);
New window icon **3922** that when activated (e.g., by a finger tap on the icon) initiates display of a UI for adding new windows to the browser (e.g., UI **3900**G, FIG. **5**G);
Vertical bar **3962** (FIG. **5**H) for the web page **3912** or other structured document that helps a user understand what portion of the web page **3912** or other structured document is being displayed;
Horizontal bar **3964** (FIG. **5**H) for the web page **3912** or other structured document that helps a user understand what portion of the web page **3912** or other structured document is being displayed;
Share icon **3966** that when activated (e.g., by a finger tap on the icon) initiates display of a UI for sharing information with other users (e.g., UI **3900**K, FIG. **5**K);
URL clear icon **3970** (FIG. **5**I) that when activated (e.g., by a finger tap on the icon) clears any input in URL entry box **3908**;
Search term entry box **3972** (FIG. **5**I) for inputting search terms for web searches;
URL suggestion list **3974** that displays URLs that match the input in URL entry box **3908** (FIG. **5**I), wherein activation of a suggested URL (e.g., by a finger tap on the suggested URL) initiates retrieval of the corresponding web page;
URL input keyboard **3976** (FIGS. **5**I and **5**M) with period key **3978**, backslash key **3980**, and ".com" key **3982** that make it easier to enter common characters in URLs;

Search term clear icon **3984** that when activated (e.g., by a finger tap on the icon) clears any input in search term entry box **3972**;

Email link icon **3986** (FIG. **5**K) that when activated (e.g., by a finger tap or other gesture on the icon) prepares an email that contains a link to be shared with one or more other users;

Email content icon **3988** (FIG. **5**K) that when activated (e.g., by a finger tap or other gesture on the icon) prepares an email that contains content to be shared with one or more other users;

IM link icon **3990** (FIG. **5**K) that when activated (e.g., by a finger tap or other gesture on the icon) prepares an IM that contains a link to be shared with one or more other users; and

Cancel icon **3992** (FIG. **5**K) that when activated (e.g., by a finger tap or other gesture on the icon) cancels the sharing UI (e.g., UI **3900**K, FIG. **5**K) and displays the previous UI.

In some embodiments, in response to a predefined gesture by the user on a block **3914** (e.g., a single tap gesture or a double tap gesture), the block is enlarged and centered (or substantially centered) in the web page display. For example, in response to a single tap gesture **3923** on block **3914-5**, block **3914-5** may be enlarged and centered in the display, as shown in UI **3900**C, FIG. **5**C. In some embodiments, the width of the block is scaled to fill the touch screen display. In some embodiments, the width of the block is scaled to fill the touch screen display with a predefined amount of padding along the sides of the display. In some embodiments, a zooming animation of the block is displayed during enlargement of the block. Similarly, in response to a single tap gesture **3925** on block **3914-2**, block **3914-2** may be enlarged with a zooming animation and two-dimensionally scrolled to the center of the display (not shown).

In some embodiments, the device analyzes the render tree of the web page **3912** to determine the blocks **3914** in the web page. In some embodiments, a block **3914** corresponds to a render node that is: a replaced inline; a block; an inline block; or an inline table.

In some embodiments, in response to the same predefined gesture by the user on a block **3914** (e.g., a single tap gesture or a double tap gesture) that is already enlarged and centered, the enlargement and/or centering is substantially or completely reversed. For example, in response to a single tap gesture **3929** (FIG. **5**C) on block **3914-5**, the web page image may zoom out and return to UI **3900**A, FIG. **5**A.

In some embodiments, in response to a predefined gesture (e.g., a single tap gesture or a double tap gesture) by the user on a block **3914** that is already enlarged but not centered, the block is centered (or substantially centered) in the web page display. For example, in response to a single tap gesture **3927** (FIG. **5**C) on block **3914-4**, block **3914-4** may be centered (or substantially centered) in the web page display. Similarly, in response to a single tap gesture **3935** (FIG. **5**C) on block **3914-6**, block **3914-6** may be centered (or substantially centered) in the web page display. Thus, for a web page display that is already enlarged, in response to a predefined gesture, the device may display in an intuitive manner a series of blocks that the user wants to view. This same gesture may initiate different actions in different contexts (e.g., (1) zooming and/or enlarging in combination with scrolling when the web page is reduced in size, UI **3900**A and (2) reversing the enlargement and/or centering if the block is already centered and enlarged).

In some embodiments, in response to a multi-touch **3931** and **3933** de-pinching gesture by the user (FIG. **5**C), the web page may be enlarged. Conversely, in response to a multi-touch pinching gesture by the user, the web page may be reduced.

In some embodiments, in response to a substantially vertical upward (or downward) swipe gesture by the user, the web page (or, more generally, other electronic documents) may scroll one-dimensionally upward (or downward) in the vertical direction. For example, in response to an upward swipe gesture **3937** by the user that is within a predetermined angle (e.g., 27°) of being perfectly vertical, the web page may scroll one-dimensionally upward in the vertical direction.

Conversely, in some embodiments, in response to a swipe gesture that is not within a predetermined angle (e.g., 27°) of being perfectly vertical, the web page may scroll two-dimensionally (i.e., with simultaneous movement in both the vertical and horizontal directions). For example, in response to an upward swipe gesture **3939** (FIG. **5**C) by the user that is not within a predetermined angle (e.g., 27°) of being perfectly vertical, the web page may scroll two-dimensionally along the direction of the swipe **3939**.

In some embodiments, in response to a multi-touch **3941** and **3943** rotation gesture by the user (FIG. **5**C), the web page may be rotated exactly 90° (UI **3900**D, FIG. **5**D) for landscape viewing, even if the amount of rotation in the multi-touch **3941** and **3943** rotation gesture is substantially different from 90°. Similarly, in response to a multi-touch **3945** and **3947** rotation gesture by the user (UI **3900**D, FIG. **5**D), the web page may be rotated exactly 90° for portrait viewing, even if the amount of rotation in the multi-touch **3945** and **3947** rotation gesture is substantially different from 90°.

Thus, in response to imprecise gestures by the user, precise movements of graphics occur. The device behaves in the manner desired by the user despite inaccurate input by the user. Also, note that the gestures described for UI **3900**C, which has a portrait view, are also applicable to UIs with a landscape view (e.g., UI **3900**D, FIG. **5**D) so that the user can choose whichever view the user prefers for web browsing.

FIGS. **6**A-**6**C are flow diagrams illustrating a process **6000** for displaying structured electronic documents such as web pages on a portable electronic device with a touch screen display (e.g., device **100**) in accordance with some embodiments. The portable electronic device displays at least a portion of a structured electronic document on the touch screen display. The structured electronic document comprises a plurality of boxes of content (e.g., blocks **3914**, FIG. **5**A) (**6006**).

In some embodiments, the plurality of boxes is defined by a style sheet language. In some embodiments, the style sheet language is a cascading style sheet language. In some embodiments, the structured electronic document is a web page (e.g., web page **3912**, FIG. **5**A). In some embodiments, the structured electronic document is an HTML or XML document.

In some embodiments, displaying at least a portion of the structured electronic document comprises scaling the document width to fit within the touch screen display width independent of the document length (**6008**).

In some embodiments, the touch screen display is rectangular with a short axis and a long axis (also called the minor axis and major axis); the display width corresponds to the short axis (or minor axis) when the structured electronic document is seen in portrait view (e.g., FIG. **5**C); and the display width corresponds to the long axis (or major axis) when the structured electronic document is seen in landscape view (e.g., FIG. **5**D).

In some embodiments, prior to displaying at least a portion of a structured electronic document, borders, margins, and/or paddings are determined for the plurality of boxes (**6002**) and

adjusted for display on the touch screen display (**6004**). In some embodiments, all boxes in the plurality of boxes are adjusted. In some embodiments, just the first box is adjusted. In some embodiments, just the first box and boxes adjacent to the first box are adjusted.

A first gesture is detected at a location on the displayed portion of the structured electronic document (e.g., gesture **3923**, FIG. **5**A) (**6010**). In some embodiments, the first gesture is a finger gesture. In some embodiments, the first gesture is a stylus gesture.

In some embodiments, the first gesture is a tap gesture. In some embodiments, the first gesture is a double tap with a single finger, a double tap with two fingers, a single tap with a single finger, or a single tap with two fingers.

A first box (e.g., Block **5** 3914-5, FIG. **5**A) in the plurality of boxes is determined at the location of the first gesture (**6012**). In some embodiments, the structured electronic document has an associated render tree with a plurality of nodes and determining the first box at the location of the first gesture comprises: traversing down the render tree to determine a first node in the plurality of nodes that corresponds to the detected location of the first gesture (**6014**); traversing up the render tree from the first node to a closest parent node that contains a logical grouping of content (**6016**); and identifying content corresponding to the closest parent node as the first box (**6018**). In some embodiments, the logical grouping of content comprises a paragraph, an image, a plugin object, or a table. In some embodiments, the closest parent node is a replaced inline, a block, an inline block, or an inline table.

The first box is enlarged and substantially centered on the touch screen display (e.g., Block **5** 3914-5, FIG. **5**C) (**6020**). In some embodiments, enlarging and substantially centering comprises simultaneously zooming and translating the first box on the touch screen display (**6022**). In some embodiments, enlarging comprises expanding the first box so that the width of the first box is substantially the same as the width of the touch screen display (**6024**).

In some embodiments, text in the enlarged first box is resized to meet or exceed a predetermined minimum text size on the touch screen display (**6026**). In some embodiments, the text resizing comprises: determining a scale factor by which the first box will be enlarged (**6028**); dividing the predetermined minimum text size on the touch screen display by the scaling factor to determine a minimum text size for text in the first box (**6030**); and if a text size for text in the first box is less than the determined minimum text size, increasing the text size for text in the first box to at least the determined minimum text size (**6032**). In some embodiments, the first box has a width; the display has a display width; and the scale factor is the display width divided by the width of the first box prior to enlarging. In some embodiments, the resizing occurs during the enlarging. In some embodiments, the resizing occurs after the enlarging.

For example, suppose the predetermined minimum text size is an 18-point font and the scale factor is determined to be two. In that case, the minimum text size for text in the first box is 18 divided by 2, or 9. If text in the first box is in a 10-point font, its text size is not increased, because 10 is greater than the 9-point minimum. Once the scale factor is applied, the text will be displayed in a 20-point font, which is greater than the predetermined minimum text size of 18. If, however, text in the first box is in an 8-point font, application of the scale factor would cause the text to be displayed in a 16-point font, which is less than the predetermined minimum text size of 18. Therefore, since 8 is less than 9, the text size is increased to at least a 9-point font and displayed in at least an 18-point font after application of the scale factor.

In some embodiments, text in the structured electronic document is resized to meet or exceed a predetermined minimum text size on the touch screen display (**6026**; FIG. **6**B). In some embodiments, the text resizing comprises: determining a scale factor by which the first box will be enlarged (**6028**); dividing the predetermined minimum text size on the touch screen display by the scaling factor to determine a minimum text size for text in the structured electronic document (**6030**); and if a text size for text in the structured electronic document is less than the determined minimum text size, increasing the text size for text in the structured electronic document to at least the determined minimum text size (**6032**). In some embodiments, the text resizing comprises: identifying boxes containing text in the plurality of boxes; determining a scale factor by which the first box will be enlarged; dividing the predetermined minimum text size on the touch screen display by the scaling factor to determine a minimum text size for text in the structured electronic document; and for each identified box containing text, if a text size for text in the identified box is less than the determined minimum text size, increasing the text size for text in the identified box to at least the determined minimum text size and adjusting the size of the identified box to accommodate the resized text.

In some embodiments, a second gesture (e.g., gesture **3929**, FIG. **5**C) is detected on the enlarged first box (**6034**). In response to detecting the second gesture, the displayed portion of the structured electronic document is reduced in size (**6036**). In some embodiments, the first box returns to its size prior to being enlarged (**6038**).

In some embodiments, the second gesture and the first gesture are the same type of gesture. In some embodiments, the second gesture is a finger gesture. In some embodiments, the second gesture is a stylus gesture.

In some embodiments, the second gesture is a tap gesture. In some embodiments, the second gesture is a double tap with a single finger, a double tap with two fingers, a single tap with a single finger, or a single tap with two fingers.

In some embodiments, while the first box is enlarged, a third gesture (e.g., gesture **3927** or gesture **3935**, FIG. **5**C) is detected on a second box other than the first box (**6040**). In response to detecting the third gesture, the second box is substantially centered on the touch screen display (**6042**). In some embodiments, the third gesture and the first gesture are the same type of gesture. In some embodiments, the third gesture is a finger gesture. In some embodiments, the third gesture is a stylus gesture.

In some embodiments, the third gesture is a tap gesture. In some embodiments, the third gesture is a double tap with a single finger, a double tap with two fingers, a single tap with a single finger, or a single tap with two fingers.

In some embodiments, a swipe gesture (e.g., gesture **3937** or gesture **3939**, FIG. **5**C) is detected on the touch screen display (**6044**; FIG. **6**C). In response to detecting the swipe gesture, the displayed portion of the structured electronic document is translated on the touch screen display (**6046**). In some embodiments, the translating comprises vertical, horizontal, or diagonal movement of the structured electronic document on the touch screen display (**6048**). In some embodiments, the swipe gesture is a finger gesture. In some embodiments, the swipe gesture is a stylus gesture.

In some embodiments, a fifth gesture (e.g., multi-touch gesture **3941**/**3943**, FIG. **5**C) is detected on the touch screen display (**6050**). In response to detecting the fifth gesture, the displayed portion of the structured electronic document is rotated on the touch screen display by 90° (**6052**). In some embodiments, the fifth gesture is a finger gesture. In some

embodiments, the fifth gesture is a multifinger gesture. In some embodiments, the fifth gesture is a twisting gesture.

In some embodiments, a change in orientation of the device is detected (**6054**). For example, the one or more accelerometers **168** (FIGS. **1**A-**1**B) detect a change in orientation of the device. In response to detecting the change in orientation of the device, the displayed portion of the structured electronic document is rotated on the touch screen display by 90° (**6056**).

In some embodiments, a multi-finger de-pinch gesture (e.g., multi-touch gesture **3931**/**3933**, FIG. **5**C) is detected on the touch screen display (**6058**). In response to detecting the multi-finger de-pinch gesture, a portion of the displayed portion of the structured electronic document is enlarged on the touch screen display in accordance with a position of the multi-finger de-pinch gesture and an amount of finger movement in the multi-finger de-pinch gesture (**6060**).

While the content display process **6000** described above includes a number of operations that appear to occur in a specific order, it should be apparent that the process **6000** can include more or fewer operations, which can be executed serially or in parallel (e.g., using parallel processors or a multi-threading environment), an order of two or more operations may be changed and/or two or more operations may be combined into a single operation.

A graphical user interface (e.g., UI **3900**A, FIG. **5**A) on a portable electronic device with a touch screen display comprises at least a portion of a structured electronic document (e.g., web page **3912**, FIG. **5**A). The structured electronic document comprises a plurality of boxes of content (e.g., blocks **3914**, FIG. **5**A). In response to detecting a first gesture (e.g., gesture **3923**, FIG. **5**A) at a location on the portion of the structured electronic document, a first box (e.g., Block **5** **3914-5**, FIG. **5**A) in the plurality of boxes at the location of the first gesture is determined and the first box is enlarged and substantially centered on the touch screen display (e.g., Block **5** **3914-5**, FIG. **5**C).

In some embodiments, in response to a tap or other predefined user gesture on URL entry box **3908**, the touch screen displays an enlarged entry box **3926** and a keyboard **616** (e.g., UI **3900**B, FIG. **5**B in portrait viewing and UI **3900**E, FIG. **5**E in landscape viewing). In some embodiments, the touch screen also displays:

- Contextual clear icon **3928** that when activated (e.g., by a finger tap on the icon) initiates deletion of all text in entry box **3926**;
- a search icon **3930** that when activated (e.g., by a finger tap on the icon) initiates an Internet search using the search terms input in box **3926**; and
- Go to URL icon **3932** that when activated (e.g., by a finger tap on the icon) initiates acquisition of the web page with the URL input in box **3926**;

Thus, the same entry box **3926** may be used for inputting both search terms and URLs. In some embodiments, whether or not clear icon **3928** is displayed depends on the context.

UI **3900**G (FIG. **5**G) is a UI for adding new windows to an application, such as the browser **147**. UI **3900**G displays an application (e.g., the browser **147**), which includes a displayed window (e.g., web page **3912-2**) and at least one hidden window (e.g., web pages **3912-1** and **3934-3** and possibly other web pages that are completely hidden offscreen). UI **3900**G also displays an icon for adding windows to the application (e.g., new window or new page icon **3936**). In response to detecting activation of the icon **3936** for adding windows, the browser adds a window to the application (e.g., a new window for a new web page **3912**).

In response to detecting a gesture on the touch screen display, a displayed window in the application is moved off the display and a hidden window is moved onto the display. For example, in response to detecting a tap gesture **3949** on the left side of the screen, the window with web page **3912-2** is moved partially or fully off-screen to the right, the window with web page **3912-3** is moved completely off-screen, partially hidden window with web page **3912-1** is moved to the center of the display, and another completely hidden window with a web page (e.g., **3912-0**) may be moved partially onto the display. Alternatively, detection of a left-to-right swipe gesture **3951** may achieve the same effect.

Conversely, in response to detecting a tap gesture **3953** on the right side of the screen, the window with web page **3912-2** is moved partially or fully off-screen to the left, the window with web page **3912-1** is moved completely off-screen, partially hidden window with web page **3912-3** is moved to the center of the display, and another completely hidden window with a web page (e.g., **3912-4**) may be moved partially onto the display. Alternatively, detection of a right-to-left swipe gesture **3951** may achieve the same effect.

In some embodiments, in response to a tap or other predefined gesture on a delete icon **3934**, the corresponding window **3912** is deleted. In some embodiments, in response to a tap or other predefined gesture on Done icon **3938**, the window in the center of the display (e.g., **3912-2**) is enlarged to fill the screen.

Additional description of adding windows to an application can be found in U.S. patent application Ser. No. 11/620,647, "Method, System, And Graphical User Interface For Viewing Multiple Application Windows," filed Jan. 5, 2007, the content of which is hereby incorporated by reference.

FIGS. **7**A-**7**F illustrate exemplary user interfaces for playing an item of inline multimedia content in accordance with some embodiments.

In some embodiments, user interfaces **4000**A-**4000**F (in FIGS. **7**A-**7**F, respectively) include the following elements, or a subset or superset thereof:

- **402**, **404**, **406**, **3902**, **3906**, **3910**, **3912**, **3918**, **3920**, **3922**, as described above;
- inline multimedia content **4002**, such as QuickTime content (**4002-1**), Windows Media content (**4002-2**), or Flash content (**4002-3**);
- other types of content **4004** in the structured document, such as text;
- Exit icon **4006** that when activated (e.g., by a finger tap on the icon) initiates exiting the inline multimedia content player UI (e.g., UI **4000**B or **4000**F) and returning to another UI (e.g., UI **4000**A, FIG. **7**A);
- Lapsed time **4008** that shows how much of the inline multimedia content **4002** has been played, in units of time;
- Progress bar **4010** that indicates what fraction of the inline multimedia content **4002** has been played and that may be used to help scroll through the inline multimedia content in response to a user gesture;
- Remaining time **4012** that shows how much of the inline multimedia content **4002** remains to be played, in units of time;
- Downloading icon **4014** that indicates when inline multimedia content **4002** is being downloaded or streamed to the device;
- Fast Reverse/Skip Backwards icon **4016** that when activated (e.g., by a finger tap on the icon) initiates reversing or skipping backwards through the inline multimedia content **4002**;
- Play icon **4018** that when activated (e.g., by a finger tap **4026** (FIG. **7**C) on the icon) initiates playing the inline

multimedia content **4002**, either from the beginning or from where the inline multimedia content was paused;

Fast Forward/Skip Forward icon **4020** that initiates forwarding or skipping forwards through the inline multimedia content **4002**;

Volume adjustment slider icon **4022** that that when activated (e.g., by a finger tap on the icon) initiates adjustment of the volume of the inline multimedia content **4002**; and

Pause icon **4024** that when activated (e.g., by a finger tap on the icon) initiates pausing the inline multimedia content **4002**.

FIG. **8** is a flow diagram illustrating a process **8000** for displaying inline multimedia content on a portable electronic device with a touch screen display (e.g., device **100**) in accordance with some embodiments. The portable electronic device displays at least a portion of a structured electronic document on the touch screen display (**8002**). The structured electronic document comprises content (e.g., content **4002** and **4004**, FIG. **7**A). In some embodiments, the structured electronic document is a web page (e.g., web page **3912**). In some embodiments, the structured electronic document is an HTML or XML document.

A first gesture (e.g., gesture **4028**, FIG. **7**A) is detected on an item of inline multimedia content (e.g., content **4002-1**, FIG. **7**A) in the displayed portion of the structured electronic document (**8004**). In some embodiments, the inline multimedia content comprises video and/or audio content. In some embodiments, the content can be played with a QuickTime, Windows Media, or Flash plugin.

In response to detecting the first gesture, the item of inline multimedia content is enlarged on the touch screen display and other content (e.g., content **4004** and other content **4002** besides **4002-1**, FIG. **7**A) in the structured electronic document besides the enlarged item of inline multimedia content ceases to be displayed (e.g., UI **4000**B, FIG. **7**B or UI **4000**F, FIG. **7**F) (**8006**).

In some embodiments, enlarging the item of inline multimedia content comprises animated zooming in on the item. In some embodiments, enlarging the item of inline multimedia content comprises simultaneously zooming and translating the item of inline multimedia content on the touch screen display. In some embodiments, enlarging the item of inline multimedia content comprises rotating the item of inline multimedia content by 90° (e.g., from UI **4000**A, FIG. **7**A to UI **4000**B, FIG. **7**B).

In some embodiments, the item of inline multimedia content has a full size; the touch screen display has a size; and enlarging the item of inline multimedia content comprises enlarging the item of inline multimedia content to the smaller of the full size of the item and the size of the touch screen display.

In some embodiments, enlarging the item of inline multimedia content comprises expanding the item of inline multimedia content so that the width of the item of inline multimedia content is substantially the same as the width of the touch screen display (e.g., UI **4000**B, FIG. **7**B or UI **4000**F, FIG. **7**F).

In some embodiments, ceasing to display other content in the structured electronic document besides the item of inline multimedia content comprises fading out the other content in the structured electronic document besides the item of inline multimedia content.

While the enlarged item of inline multimedia content is displayed, a second gesture is detected on the touch screen display (e.g., gesture **4030**, FIG. **7**B) (**8008**).

In response to detecting the second gesture, one or more playback controls for playing the enlarged item of inline multimedia content are displayed (**8010**). In some embodiments, the one or more playback controls comprise a play icon (e.g., icon **4018**, FIG. **7**C), a pause icon (e.g., icon **4024**, FIG. **7**E), a sound volume icon (e.g., icon **4022**), and/or a playback progress bar icon (e.g., icon **4010**).

In some embodiments, displaying one or more playback controls comprises displaying one or more playback controls on top of the enlarged item of inline multimedia content (e.g., playback controls **4016**, **4018**, **4020**, and **4022** are on top of enlarged inline multimedia content **4002-1** in FIG. **7**C). In some embodiments, the one or more playback controls are superimposed on top of the enlarged item of inline multimedia content. In some embodiments, the one or more playback controls are semitransparent.

In some embodiments, an instruction in the structured electronic document to automatically start playing the item of inline multimedia content is overridden, which gives the device time to download more of the selected inline multimedia content prior to starting playback.

A third gesture is detected on one of the playback controls (e.g., gesture **4026** on play icon **4018**, FIG. **7**C) (**8012**).

In response to detecting the third gesture, the enlarged item of inline multimedia content is played (**8014**). In some embodiments, playing the enlarged item of inline multimedia content comprises playing the enlarged item of inline multimedia content with a plugin for a content type associated with the item of inline multimedia content.

In some embodiments, while the enlarged item of inline multimedia content is played, the one or more playback controls cease to be displayed (e.g., FIG. **7**D, which no longer displays playback controls **4016**, **4018**, **4020**, and **4022**, but still shows **4006**, **4008**, **4010**, and **4012**). In some embodiments, all of the playback controls cease to be displayed. In some embodiments, ceasing to display the one or more playback controls comprises fading out the one or more playback controls. In some embodiments, the display of the one or more playback controls is ceased after a predetermined time. In some embodiments, the display of the one or more playback controls is ceased after no contact is detected with the touch screen display for a predetermined time.

In some embodiments, a fourth gesture is detected on the touch screen display (**8016**). In response to detecting the fourth gesture, at least the portion of the structured electronic document is displayed again (e.g., FIG. **7**A) (**8018**). In some embodiments, the fourth gesture comprises a tap gesture on a playback completion icon, such as a done icon (e.g., gesture **4032** on done icon **4006**, FIG. **7**D). In some embodiments, the item of inline multimedia content returns to its size prior to being enlarged.

In some embodiments, the first, second, and third gestures are finger gestures. In some embodiments, the first, second, and third gestures are stylus gestures.

In some embodiments, the first, second, and third gestures are tap gestures. In some embodiments, the tap gesture is a double tap with a single finger, a double tap with two fingers, a single tap with a single finger, or a single tap with two fingers.

While the multimedia display process **8000** described above includes a number of operations that appear to occur in a specific order, it should be apparent that the process **8000** can include more or fewer operations, which can be executed serially or in parallel (e.g., using parallel processors or a multi-threading environment), an order of two or more operations may be changed and/or two or more operations may be combined into a single operation.

A graphical user interface on a portable electronic device with a touch screen display comprises: at least a portion of a structured electronic document, wherein the structured electronic document comprises content; an item of inline multimedia content in the portion of the structured electronic document; and one or more playback controls. In response to detecting a first gesture on the item of inline multimedia content, the item of inline multimedia content on the touch screen display is enlarged, and display of other content in the structured electronic document besides the enlarged item of inline multimedia content is ceased. In response to detecting a second gesture on the touch screen display while the enlarged item of inline multimedia content is displayed, the one or more playback controls for playing the enlarged item of inline multimedia content are displayed. In response to detecting a third gesture on one of the playback controls, the enlarged item of inline multimedia content is played.

The foregoing description, for purpose of explanation, has been described with reference to specific embodiments. However, the illustrative discussions above are not intended to be exhaustive or to limit the invention to the precise forms disclosed. Many modifications and variations are possible in view of the above teachings. The embodiments were chosen and described in order to best explain the principles of the invention and its practical applications, to thereby enable others skilled in the art to best utilize the invention and various embodiments with various modifications as are suited to the particular use contemplated.

What is claimed is:

1. A computer-implemented method, comprising:
at a portable electronic device with a touch screen display;
displaying at least a portion of a web page on the touch screen display, wherein the web page comprises a plurality of boxes of content;
detecting a first finger tap gesture at a location on the displayed portion of the web page;
determining a first box in the plurality of boxes at the location of the first finger tap gesture; and
enlarging and translating the web page so as to substantially center the first box on the touch screen display, wherein enlarging comprises expanding the first box so that the width of the first box is substantially the same as the width of the touch screen display;
resizing text in the enlarged first box to meet or exceed a predetermined minimum text size on the touch screen display;
while the first box is enlarged, detecting a second finger tap gesture on a second box other than the first box; and
in response to detecting the second finger tap gesture, translating the web page so as to substantially center the second box on the touch screen display.

2. A computer-implemented method, comprising:
at a portable electronic device with a touch screen display;
displaying at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content;
detecting a first gesture at a location on the displayed portion of the structured electronic document;
determining a first box in the plurality of boxes at the location of the first gesture;
enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display;
while the first box is enlarged, a second gesture is detected on a second box other than the first box; and
in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display.

3. The method of claim **2**, including: prior to displaying at least a portion of a structured electronic document,
determining borders, margins, and/or paddings for the plurality of boxes that are specified in the structured electronic document; and
adjusting the borders, margins, and/or paddings for the plurality of boxes for display on the touch screen display.

4. The method of claim **2**, wherein the structured electronic document is a web page.

5. The method of claim **2**, wherein the structured electronic document is an HTML or XML document.

6. The method of claim **2**, wherein:
the structured electronic document has a document width and a document length;
the touch screen display has a display width; and
displaying at least a portion of the structured electronic document comprises scaling the document width to fit within the display width independent of the document length.

7. The method of claim **6**, wherein:
the touch screen display is rectangular with a short axis and a long axis;
the display width corresponds to the short axis when the structured electronic document is seen in portrait view; and
the display width corresponds to the long axis when the structured electronic document is seen in landscape view.

8. The method of claim **2**, wherein the plurality of boxes are defined by a style sheet language.

9. The method of claim **8**, wherein the style sheet language is a cascading style sheet language.

10. The method of claim **2**, wherein the first gesture is a finger gesture.

11. The method of claim **2**, wherein the first gesture is a stylus gesture.

12. The method of claim **2**, wherein the first gesture is a tap gesture.

13. The method of claim **12**, wherein the first gesture is a double tap with a single finger, a double tap with two fingers, a single tap with a single finger, or a single tap with two fingers.

14. The method of claim **2**, wherein:
the structured electronic document has an associated render tree with a plurality of nodes; and determining the first box at the location of the first gesture comprises:
traversing down the render tree to determine a first node in the plurality of nodes that corresponds to the detected location of the first gesture;
traversing up the render tree from the first node to a closest parent node that contains a logical grouping of content; and
identifying content corresponding to the closest parent node as the first box.

15. The method of claim **14**, wherein the logical grouping of content comprises a paragraph, an image, a plugin object, or a table.

16. The method of claim **14**, wherein the closest parent node is a replaced inline, a block, an inline block, or an inline table.

17. The method of claim **2**, wherein enlarging and translating the structured electronic document comprises display-

ing at least a portion of the second box of the plurality of boxes of content on the touch screen display.

18. The method of claim **2**, wherein enlarging comprises expanding the first box so that the width of the first box is substantially the same as the width of the touch screen display.

19. The method of claim **2**, including resizing text in the enlarged first box to meet or exceed a predetermined minimum text size on the touch screen display.

20. The method of claim **19**, wherein the text resizing comprises:

determining a scale factor by which the first box will be enlarged;

dividing the predetermined minimum text size on the touch screen display by the scaling factor to determine a minimum text size for text in the first box; and

if a text size for text in the first box is less than the determined minimum text size, increasing the text size for text in the first box to at least the determined minimum text size.

21. The method of claim **20**, wherein: the first box has a width; the display has a display width; and the scale factor is the display width divided by the width of the first box prior to enlarging.

22. The method of claim **19**, wherein the resizing occurs during the enlarging.

23. The method of claim **19**, wherein the resizing occurs after the enlarging.

24. The method of claim **2**, including resizing text in the structured electronic document to meet or exceed a predetermined minimum text size on the touch screen display.

25. The method of claim **24**, wherein the text resizing comprises:

determining a scale factor by which the first box will be enlarged;

dividing the predetermined minimum text size on the touch screen display by the scaling factor to determine a minimum text size for text in the structured electronic document; and

if a text size for text in the structured electronic document is less than the determined minimum text size, increasing the text size for text in the structured electronic document to at least the determined minimum text size.

26. The method of claim **24**, wherein the text resizing comprises:

identifying boxes containing text in the plurality of boxes;

determining a scale factor by which the first box will be enlarged;

dividing the predetermined minimum text size on the touch screen display by the scaling factor to determine a minimum text size for text in the structured electronic document; and

for each identified box containing text, if a text size for text in the identified box is less than the determined minimum text size, increasing the text size for text in the identified box to at least the determined minimum text size and adjusting the size of the identified box.

27. The method of claim **2**, including:

detecting a third gesture on the enlarged second box; and

in response to detecting the third gesture, reducing in size the displayed portion of the structured electronic document.

28. The method of claim **27**, wherein the first box returns to its size prior to being enlarged.

29. The method of claim **27**, wherein the third gesture and the first gesture are the same type of gesture.

30. The method of claim **27**, wherein the third gesture is a finger gesture.

31. The method of claim **27**, wherein the third gesture is a stylus gesture.

32. The method of claim **27**, wherein the third gesture is a tap gesture.

33. The method of claim **32**, wherein the third gesture is a double tap with a single finger, a double tap with two fingers, a single tap with a single finger, or a single tap with two fingers.

34. The method of claim **2**, wherein the second gesture and the first gesture are the same type of gesture.

35. The method of claim **2**, wherein the second gesture is a finger gesture.

36. The method of claim **2**, wherein the second gesture is a stylus gesture.

37. The method of claim **2**, wherein the second gesture is a tap gesture.

38. The method of claim **37**, wherein the second gesture is a double tap with a single finger, a double tap with two fingers, a single tap with a single finger, or a single tap with two fingers.

39. The method of claim **2**, including:

detecting a swipe gesture on the touch screen display; and

in response to detecting the swipe gesture, translating the displayed portion of the structured electronic document on the touch screen display.

40. The method of claim **39**, wherein translating comprises vertical, horizontal, or diagonal movement of the structured electronic document on the touch screen display.

41. The method of claim **39**, wherein the swipe gesture is a finger gesture.

42. The method of claim **39**, wherein the swipe gesture is a stylus gesture.

43. The method of claim **2**, including:

detecting a fifth gesture on the touch screen display,

in response to detecting the fifth gesture, rotating the displayed portion of the structured electronic document on the touch screen display by 90° .

44. The method of claim **43**, wherein the fifth gesture is a finger gesture.

45. The method of claim **44**, wherein the fifth gesture is a multifinger gesture.

46. The method of claim **45**, wherein the fifth gesture is a twisting gesture.

47. The method of claim **2**, including:

detecting a change in orientation of the device,

in response to detecting the change in orientation of the device, rotating the displayed portion of the structured electronic document on the touch screen display by 90° .

48. The method of claim **2**, including:

detecting a multi-finger de-pinch gesture on the touch screen display,

in response to detecting the multi-finger de-pinch gesture, enlarging a portion of the displayed portion of the structured electronic document on the touch screen display in accordance with a position of the multi-finger de-pinch gesture and an amount of finger movement in the multi-finger de-pinch gesture.

49. A graphical user interface on a portable electronic device with a touch screen display, comprising:

at least a portion of a structured electronic document, wherein the structured electronic document comprises a plurality of boxes of content;

wherein:

in response to detecting a first gesture at a location on the portion of the structured electronic document:

a first box in the plurality of boxes at the location of the first gesture is determined;

the structured electronic document is enlarged and translated so that the first box is substantially centered on the touch screen display;

while the first box is enlarged, a second gesture is detected on a second box other than the first box; and

in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display.

50. A portable electronic device, comprising:

a touch screen display;

one or more processors;

memory; and

one or more programs, wherein the one or more programs are stored in the memory and configured to be executed by the one or more processors, the one or more programs including:

instructions for displaying at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content;

instructions for detecting a first gesture at a location on the displayed portion of the structured electronic document;

instructions for determining a first box in the plurality of boxes at the location of the first gesture;

instructions for enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display;

instruction for, while the first box is enlarged, a second gesture is detected on a second box other than the first box; and

instructions for, in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display.

51. A non-transitory computer readable storage medium storing one or more programs, the one or more programs comprising instructions, which when executed by a portable electronic device with a touch screen display, cause the device to:

display at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content;

detect a first gesture at a location on the displayed portion of the structured electronic document;

determine a first box in the plurality of boxes at the location of the first gesture;

enlarge and translate the structured electronic document so that the first box is substantially centered on the touch screen display;

while the first box is enlarged, detect a second gesture on a second box other than the first box; and

in response to detecting the second gesture, translate the structured electronic document so that the second box is substantially centered on the touch screen display.

52. A portable electronic device with a touch screen display, comprising:

means for displaying at least a portion of a structured electronic document on the touch screen display, wherein the structured electronic document comprises a plurality of boxes of content;

means for detecting a first gesture at a location on the displayed portion of the structured electronic document;

means for determining a first box in the plurality of boxes at the location of the first gesture;

means for enlarging and translating the structured electronic document so that the first box is substantially centered on the touch screen display;

means for, while the first box is enlarged, a second gesture is detected on a second box other than the first box; and

means for, in response to detecting the second gesture, the structured electronic document is translated so that the second box is substantially centered on the touch screen display.

53. A portable electronic device, comprising:

a touch screen display;

one or more processors;

memory; and

a program, wherein the program is stored in the memory and configured to be executed by the one or more processors, the program including instructions for:

displaying a user interface on the touch screen display, wherein the user interface includes:

a displayed window of an application, the displayed window being in full view on the touch screen display, and

one or more partially hidden windows of the application;

while displaying the displayed window and the one or more partially hidden windows, detecting a gesture on the touch screen display;

in response to detecting the gesture,

moving the displayed window partially or fully off the touch screen display, and

moving a first partially hidden window into full view on the touch screen display; and

in response to detecting a gesture on an icon, a window of the application in the center of the touch screen display is enlarged.

54. The portable electronic device of claim **53**, wherein the detected gesture is a swipe gesture.

55. The portable electronic device of claim **53**, including:

in response to detecting the gesture, moving a second partially hidden window off the touch screen display.

56. The portable electronic device of claim **53**, wherein the detected gesture is a left-to-right swipe gesture, including:

in response to detecting the left-to-right swipe gesture:

moving the displayed window partially off-screen to the right,

moving the first partially hidden window into full view on the touch screen display, and

moving a second partially hidden window completely off-screen.

57. The portable electronic device of claim **53**, wherein the user interface is displayed in response to activation of an icon for initiating display of the user interface, and wherein the icon for initiating display of the user interface indicates the number of windows in the application.

58. The portable electronic device of claim **53**, wherein the displayed window and the one or more partially hidden windows are displayed prior to detecting the gesture.

59. A computer-implemented method, comprising:

at a portable electronic device with a touch screen display:

displaying a user interface on the touch screen display, wherein the user interface includes:

a displayed window of an application, the displayed window being in full view on the touch screen display, and

one or more partially hidden windows of the application;

while displaying the displayed window and the one or more partially hidden windows, detecting a gesture on the touch screen display;

in response to detecting the gesture,

moving the displayed window partially or fully off the touch screen display, and

moving a first partially hidden window into full view on the touch screen display; and,

in response to detecting a gesture on an icon, a window of the application in the center of the touch screen display is enlarged.

60. A graphical user interface on a portable electronic device with a touch screen display, the graphical user interface comprising:

a displayed window of an application, the displayed window being in full view on the touch screen display, and

one or more partially hidden windows of the application;

wherein:

while displaying the displayed window and the one or more partially hidden windows, a gesture is detected on the touch screen display;

in response to detecting the gesture:

the displayed window is moved partially or fully off the touch screen display, and

a first partially hidden window is moved into full view on the touch screen display; and,

in response to detecting a gesture on an icon, a window of the application in the center of the touch screen display is enlarged.

61. A non-transitory computer readable storage medium storing one or more programs, the one or more programs comprising instructions, which when executed by a portable electronic device with a touch screen display, cause the device to:

display a user interface on the touch screen display, wherein the user interface includes:

a displayed window of an application, the displayed window being in full view on the touch screen display, and

one or more partially hidden windows of the application;

while displaying the displayed window and the one or more partially hidden windows, detect a gesture on the touch screen display;

in response to detecting the gesture,

move the displayed window partially or fully off the touch screen display, and

move a first partially hidden window into full view on the touch screen display; and

in response to detecting a gesture on an icon, enlarge a window of the application in the center of the touch screen display.

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USPTO PATENT FULL-TEXT AND IMAGE DATABASE

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Images

(1 of 1)

United States Patent
Andre , et al.

D504,889
May 10, 2005

Electronic device

Claims

We claim the ornamental design for an electronic device, substantially as shown and described.

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Description

FIG. 1 is a top perspective view of an electronic device in accordance with the present design;

FIG. 2 is a bottom perspective view thereof;

FIG. 3 is a top view thereof;

FIG. 4 is a bottom view thereof;

FIG. 5 is a left side view thereof;

FIG. 6 is a right side view thereof;

FIG. 7 is an upper side view thereof;

FIG. 8 is a lower side view thereof; and,

FIG. 9 is an exemplary diagram of the use of the electronic device thereof the broken lines being shown for illustrative puposes only and form no part of the claimed design.

* * * * *

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1.7.2 FACEBOOK

In addition, it is worth to refer to the patent of the facebook social networking service. Facebook's name stems from the colloquial name for the book given to students at the start of the academic year to help students get to know each other. It was founded in February 2004 by Mark Zuckerberg with his college roommates and fellow Harvard University students Eduardo Saverin, Andrew McCollum, Dustin Moskovitz and Chris Hughes. The website's membership was initially limited by the founders to Harvard students, but was expanded to other colleges in the Boston area. Facebook now allows any users who declare to be at least 13 years old to become registered users of the site.

Users must register before using the site, after which they may create a personal profile, add other users as friends and exchange messages including automatic notifications when they update their profile. Additionally, users may join common interest user groups, organized by workplace, school or college, or other characteristics, and categorize their friends into lists. As of September 2012 Facebook has over one billion active users.

The United States Patent No 8.225.376 B2 with the title "Dynamically generating a privacy summary" and the US 2012/0203838A1 with the title "Dynamically updating media content for display to a user of a social network environment based on user interactions." follow;

US008225376B2

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(54) **DYNAMICALLY GENERATING A PRIVACY SUMMARY**

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H04L 29/06 (2006.01)

(52) **U.S. Cl.** **726/4**; 715/731

(58) **Field of Classification Search** 715/731; 726/4; 706/12

See application file for complete search history.

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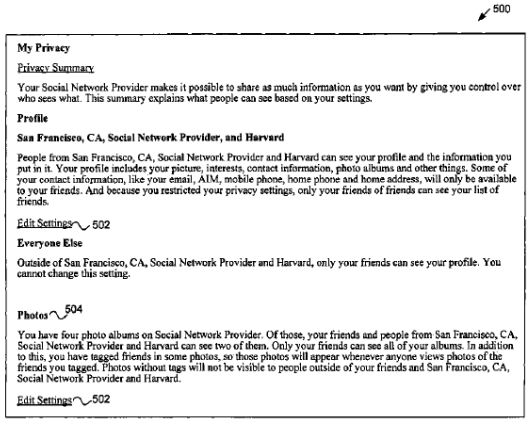
(57) **ABSTRACT**

A system and method for dynamically generating a privacy summary is provided. The present invention provides a system and method for dynamically generating a privacy summary. A profile for a user is generated. One or more privacy setting selections are received from the user associated with the profile. The profile associated with the user is updated to incorporate the one or more privacy setting selections. A privacy summary is then generated for the profile based on the one or more privacy setting selections.

22 Claims, 6 Drawing Sheets



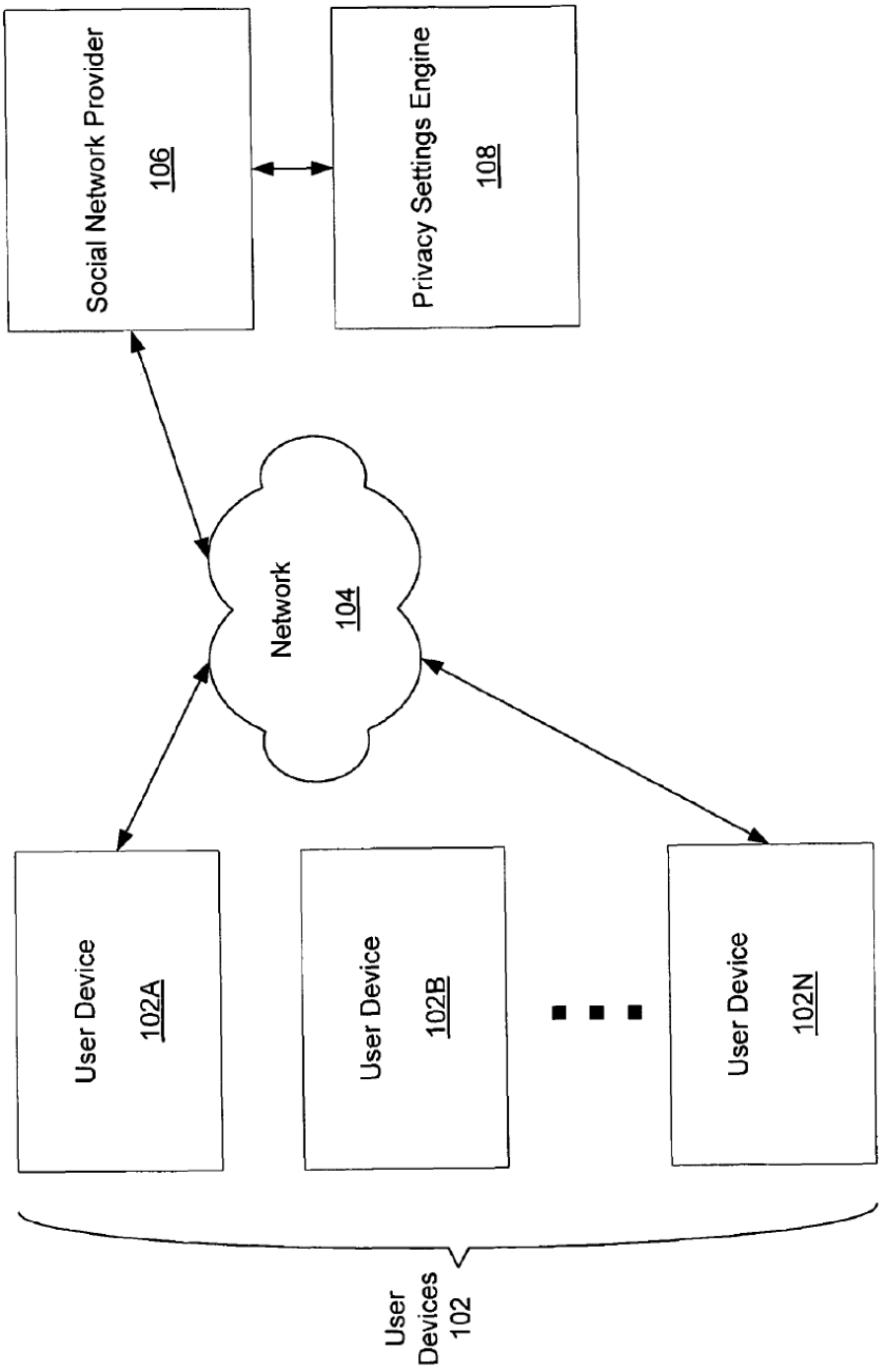

Social Network Provider
106
Privacy Settings Engine
108
Network
104
User Device
102A
User Device
102B
User Device
102N
User Devices
102

FIG. 1

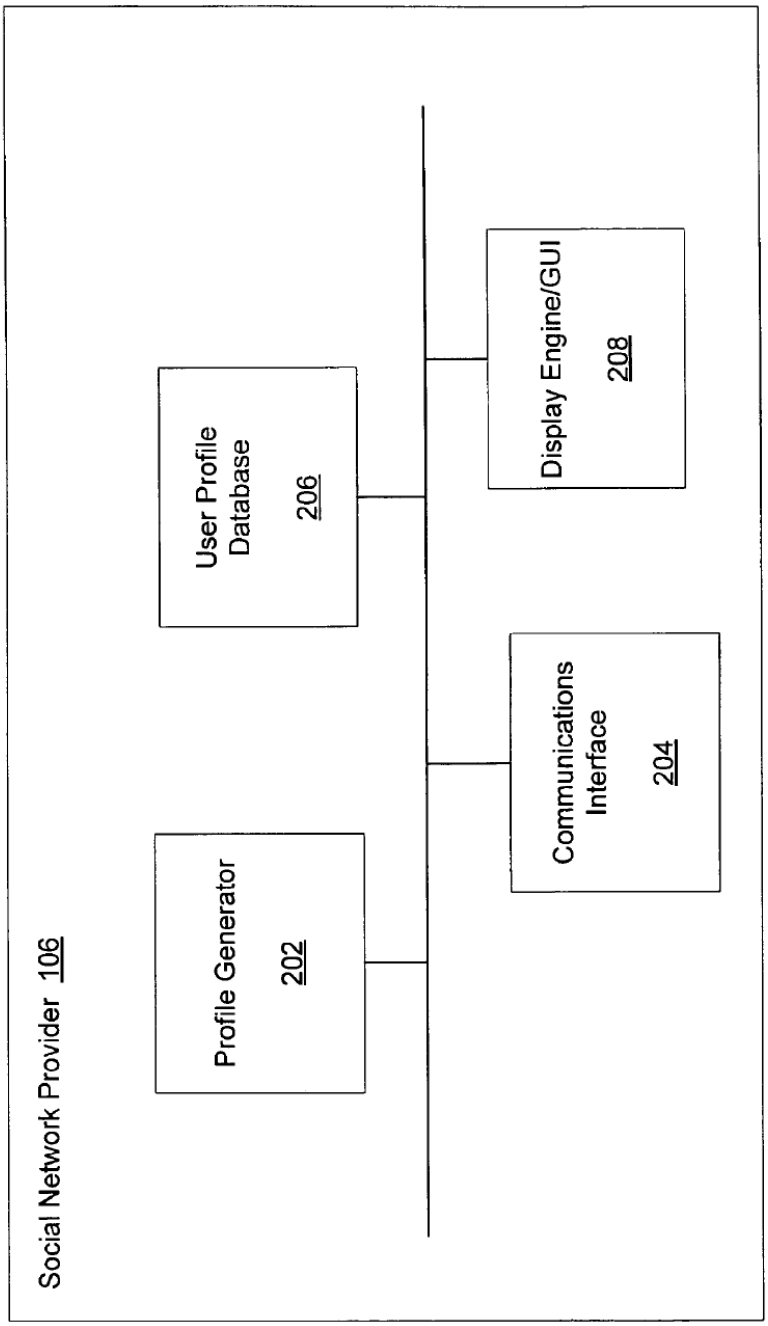

Social Network Provider 106
Profile Generator 202
Communications Interface 204
User Profile Database 206
Display Engine/GUI 208

FIG. 2

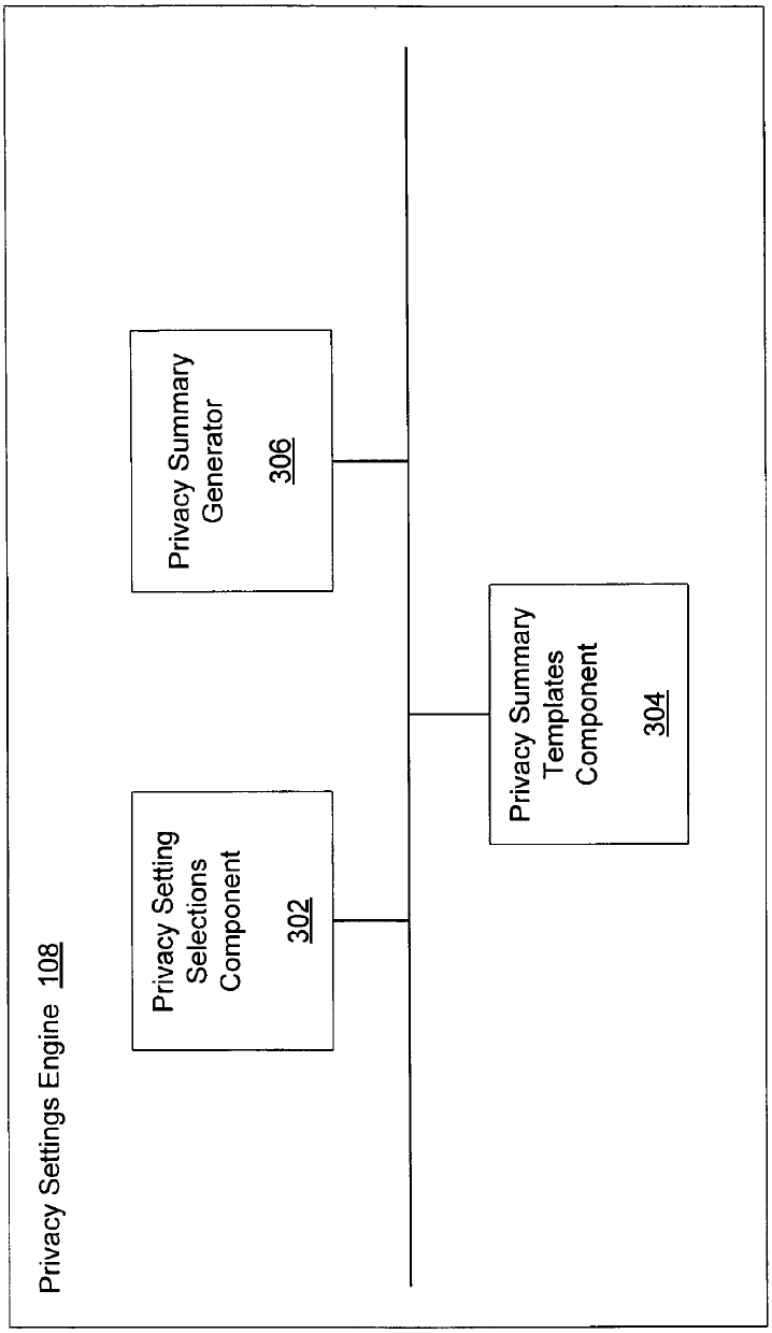

Privacy Settings Engine 108
Privacy Setting Selections Component 302
Privacy Summary Generator 306
Privacy Summary Templates Component 304

FIG. 3

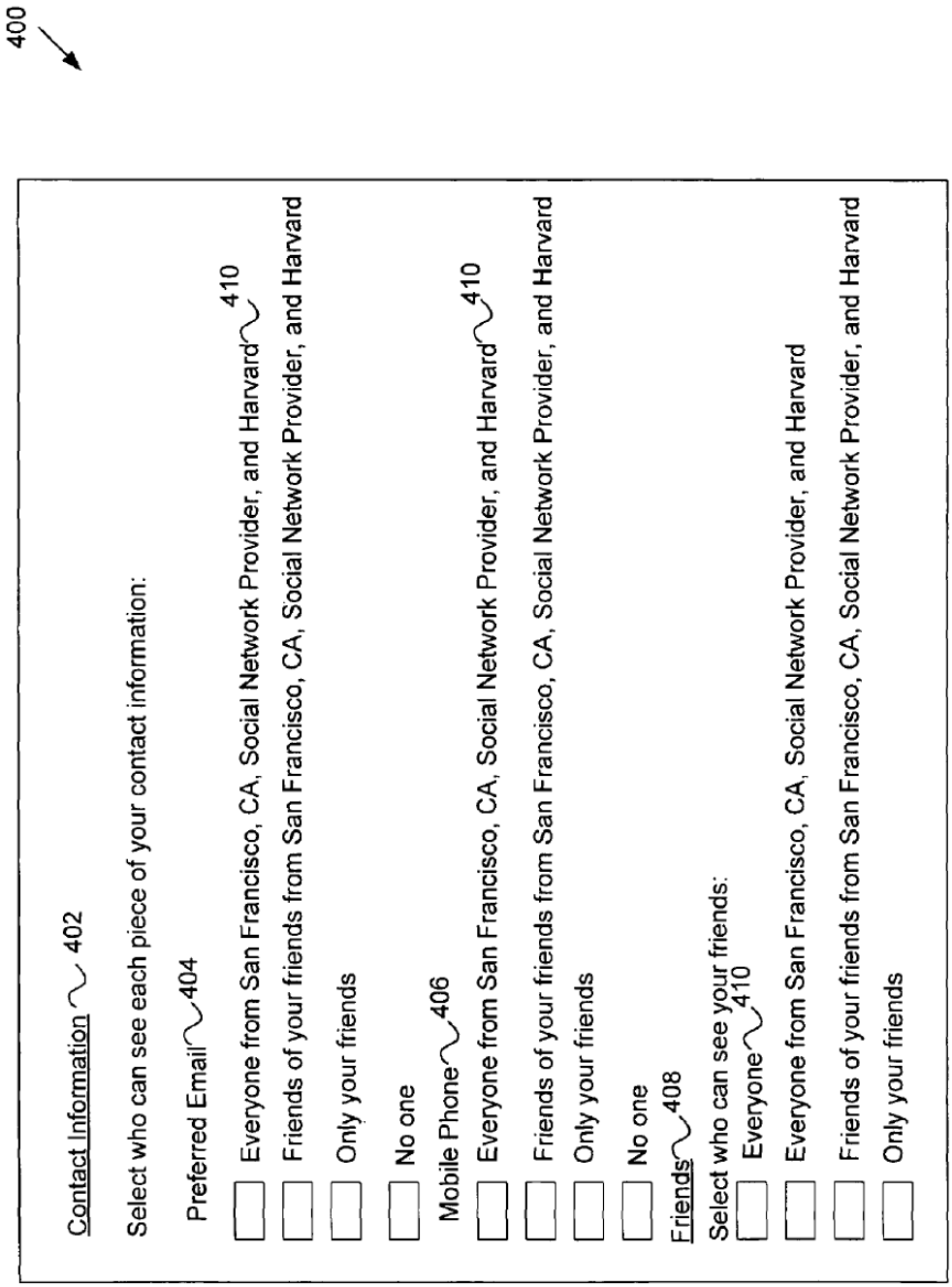

400
Contact Information 402
Select who can see each piece of your contact information:
Preferred Email 404
Everyone from San Francisco, CA, Social Network Provider, and Harvard 410
Friends of your friends from San Francisco, CA, Social Network Provider, and Harvard
Only your friends
No one
Mobile Phone 406
Everyone from San Francisco, CA, Social Network Provider, and Harvard 410
Friends of your friends from San Francisco, CA, Social Network Provider, and Harvard
Only your friends
No one
Friends 408
Select who can see your friends:
Everyone 410
Everyone from San Francisco, CA, Social Network Provider, and Harvard
Friends of your friends from San Francisco, CA, Social Network Provider, and Harvard
Only your friends

FIG. 4

500
My Privacy
Privacy Summary
Your Social Network Provider makes it possible to share as much information as you want by giving you control over who sees what. This summary explains what people can see based on your settings.
Profile
San Francisco, CA, Social Network Provider, and Harvard
People from San Francisco, CA, Social Network Provider and Harvard can see your profile and the information you put in it. Your profile includes your picture, interests, contact information, photo albums and other things. Some of your contact information, like your email, AIM, mobile phone, home phone and home address, will only be available to your friends. And because you restricted your privacy settings, only your friends of friends can see your list of friends.
Edit Settings
502
Everyone Else
Outside of San Francisco, CA, Social Network Provider and Harvard, only your friends can see your profile. You cannot change this setting.
Photos
504
You have four photo albums on Social Network Provider. Of those, your friends and people from San Francisco, CA, Social Network Provider and Harvard can see two of them. Only your friends can see all of your albums. In addition to this, you have tagged friends in some photos, so those photos will appear whenever anyone views photos of the friends you tagged. Photos without tags will not be visible to people outside of your friends and San Francisco, CA, Social Network Provider and Harvard.
Edit Settings
502

FIG. 5

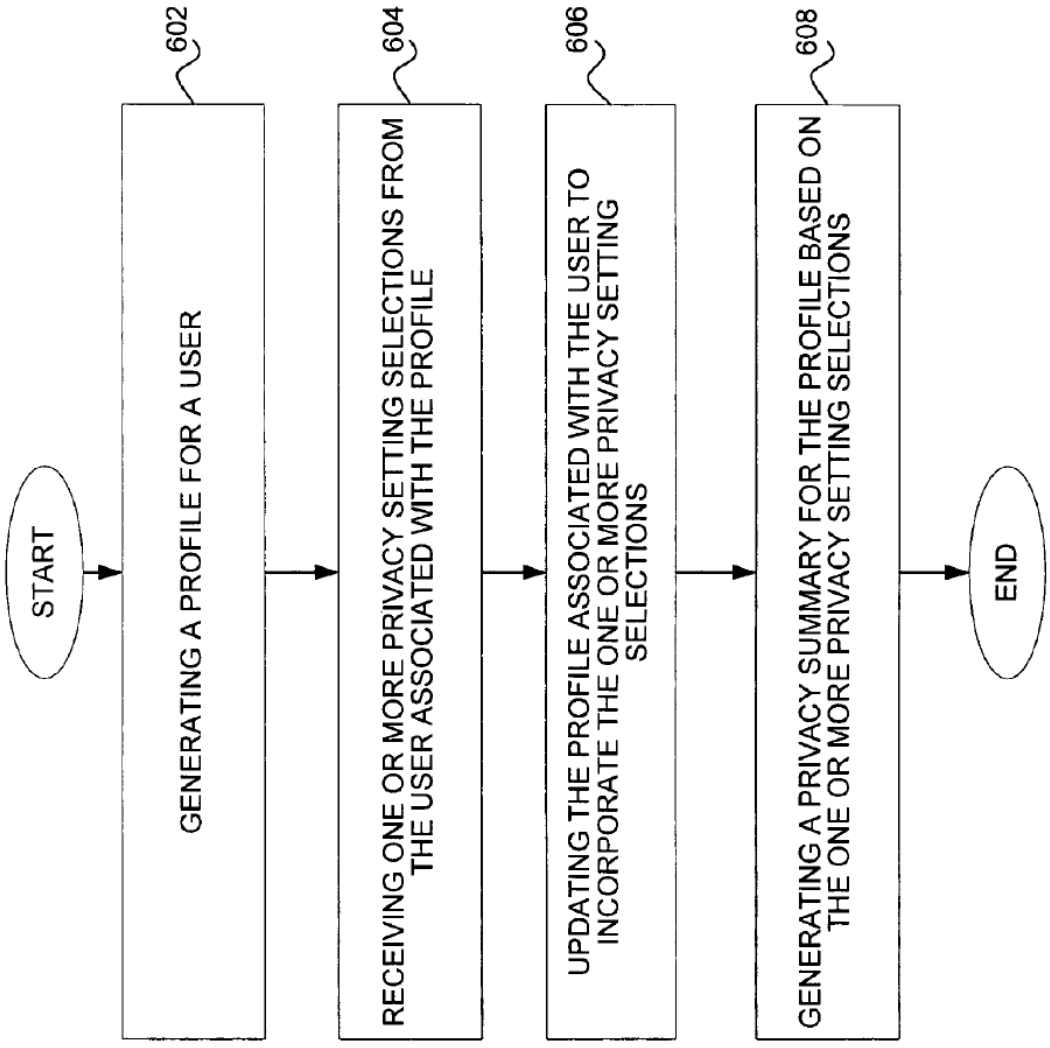

START
602
GENERATING A PROFILE FOR A USER
604
RECEIVING ONE OR MORE PRIVACY SETTING SELECTIONS FROM THE USER ASSOCIATED WITH THE PROFILE
606
UPDATING THE PROFILE ASSOCIATED WITH THE USER TO INCORPORATE THE ONE OR MORE PRIVACY SETTING SELECTIONS
608
GENERATING A PRIVACY SUMMARY FOR THE PROFILE BASED ON THE ONE OR MORE PRIVACY SETTING SELECTIONS
END

FIG. 6

DYNAMICALLY GENERATING A PRIVACY SUMMARY

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to privacy settings, and more particularly to systems and methods for dynamically generating a privacy summary.

2. Description of Related Art

Conventionally, users of networking websites connect with other users by providing information about themselves. For example, a user may post contact information, background information, current job position, hobbies, and so forth. Other users may contact the user based on common interests or for any other reason.

Recently, social networking websites have developed systems for better connecting various users. For example, users may be grouped together based on geographical location, employer, job type, and so forth. As social networking has grown more popular, users have realized a need for a certain amount of privacy. In other words, not every particular user wants all the other users to be able to access the information about the particular user.

There are existing mechanisms that allow the user to display information about the user or to not display their information. Some mechanisms may allow the user to select settings that display only certain information to the users. Typically, however, these mechanisms are all or nothing. In other words, the user can choose to display pieces of the information or not. Further, often the user is unaware of what the settings selected represent with respect to the information that will, or will not, be displayed about the user.

SUMMARY OF THE INVENTION

The present invention provides a system and method for dynamically generating a privacy summary. In a method according to one embodiment of the invention, a profile for a user is generated. One or more privacy setting selections are received from the user associated with the profile. The profile associated with the user is updated to incorporate the one or more privacy setting selections. A privacy summary is then generated for the profile based on the one or more privacy setting selections.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** illustrates a schematic diagram of an exemplary architecture for dynamically generating a privacy summary;

FIG. **2** illustrates a schematic diagram of an exemplary social network provider;

FIG. **3** illustrates a schematic diagram of an exemplary privacy settings engine;

FIG. **4** illustrates a schematic diagram of an exemplary privacy setting selections screen;

FIG. **5** illustrates a schematic diagram of an exemplary privacy summary; and

FIG. **6** illustrates a flow chart showing an exemplary process for dynamically generating a privacy summary.

DETAILED DESCRIPTION OF THE INVENTION

A system and method for dynamically generating a privacy summary is provided. A user may select privacy settings associated with various groups or categories. A user profile may then be updated to reflect the privacy settings selected. A privacy summary is generated based on the privacy settings selected associated with the user profile. The privacy summary may be displayed to the user as a narrative explaining what each other user or group of users can access about the user based on the privacy settings selected by the user. Accordingly, a particular user may better be able to understand the access to the particular user's information granted to other users based on the privacy summary.

FIG. **1** illustrates a schematic diagram of an exemplary architecture for dynamically generating a privacy summary. User devices **102**, such as a user device **102**A, a user device **102**B, and a user device **102**N, communicate over a network **104** with a social network provider **106**. The user devices **102**A-**102**N may comprise any device associated with one or more users, such as a cellular telephone, a personal digital assistant, a desktop or a laptop computer, and so forth. Any type of user devices **102** are within the scope of various embodiments.

The social network provider **106** may comprise any user or entity that provides social networking services, communication services, dating services, and so forth. For example, the social network provider **106** may host a website that allows one or more users at the user devices **102** to communicate with one another via the website. In one instance, the user associated with the user device **102**A may communicate with the user associated with the user device **102**B via a social networking website associated with the social network provider **106** that offers the user an opportunity to connect or reconnect with one or more other users that attended, for example, the same university as the user.

A privacy settings engine **108** is coupled to the social network provider **106**. The privacy settings engine **108** can receive privacy settings selections from the users at the user devices **102**. The privacy settings engine **108** can save the privacy setting selections to a profile associated with each user. Once the privacy setting selections are selected by the user, the privacy settings engine **108** can generate a privacy summary for the user that explains to the user what each of the privacy settings selections means with respect to what other users can access about the user that selected the privacy settings.

For example, a user at the user device **102**A selects an option to display photos associated with a user profile for the user only to "friends" of that user. Photos may include audio/video. Audio/video is any audio, video, audiovisual, pictorial, photograph, image form, and/or variations and combinations thereof. The privacy summary generated by the privacy settings engine **108** explains that people that comprise the "friends" grouping will be able to view photos and photo albums for the user, but people that comprise the "school" grouping and the "geography" grouping will not be able to access the photos.

Although the users at the user devices **102** can group other users according to categories, such as "friends", "school", "geography", "business", and so forth, any type of grouping may be employed by the user and/or the social network provider **106**. Further, according to some embodiments, the user may select privacy settings for individual users. For instance, the user may select privacy settings for Jane, privacy settings for John, and/or privacy settings for grouping of users, which may or may not include Jane and John.

Referring now to FIG. **2**, an exemplary social network provider **106** is illustrated. The social network provider **106** may comprise a server, a client device, or any other device.

The social network provider **106** includes a profile generator **202** for creating the profile for the user, as discussed herein. For example, the user may provide contact informa-

tion, friends, photos, and so forth to associate with the profile for the user. The profile generator **202** utilizes the information provided by the user to generate the profile (i.e., the user profile). As discussed herein, the profile may include one or more categories or subcategories and privacy settings selection may be provided for each of the one or more categories or subcategories.

The social network provider **106** includes a communications interface **204** for communicating with the user devices **102**, such as the user device **102**A-**102**N described herein, over the network **104**. The user devices **102** communicate various types of information, such as privacy settings selections, groupings of other users, and so forth to the social network provider **106** via the communications interface **204**. Any type of communications interface **204** is within the scope of various embodiments.

A display engine/GUI **206** may also be provided by the social network provider **106**. The display engine/GUI **206** displays the privacy settings selections, privacy summary, and so forth to the users associated with the user devices **102**. The users can interact with the social network provider **106** via the display engine/GUI **206**. For example, the users can select privacy settings, change privacy settings, access their own user profile, access other users' information available via the social network provider, and so forth via the display engine/GUI **206**.

A user profile database **208** is provided for storing data associated with each of the users, such as the users associated with the user device **102**A-**102**N, in the user profiles generated by the profile generator **202**. When the users at the user devices **102** select the privacy settings to associate with their user profiles, the user profile database **208** updates the user data associated with each user profile. Accordingly, the privacy settings selections are stored in association with each user profile. The user profiles and/or the privacy settings selections may be stored, modified, added, and so forth to any storage medium, according to some embodiments.

According to exemplary embodiments, one or more networks may be provided for each user. Each user may select different privacy settings for different networks. For example, the user at the user device **102**A may have a network comprised of people grouped according to a university attended, a network comprised of people grouped according to the user's geographical location of residence, a network comprised of people grouped according to a common field of work, a network comprised of people grouped according to a particular business, and so forth. The user at the user device **102**A can then select privacy settings for each of these networks.

Any type of network may be provided by the social network provider **106**. In other words, a network may comprise people grouped according to any type of category, such as various social networks described herein, like "friends", "geographical location", and so forth. The user may specify the networks, the categories, subcategories, and so forth and/or the networks, the categories, the subcategories, and so on may be predetermined by the social network provider **106**.

A single user profile may represent the various networks in which the user participates, with different privacy setting options available for each network, as discussed herein. For example, the user at the user device **102**A may select different privacy settings for a university network and for a geographical location network. Alternatively, the user at the user device **102**A may have a separate user profile for each network in which the user participates, with different privacy setting options available for each user profile. For example, the user at the user device **102**A may have a separate user profile for the university network and for the geographical location network, each user profile having privacy setting options available for each network by virtue of the separate user profiles associated with each of the networks.

According to some embodiments, the user can select the same privacy settings for one or more of the networks. In other words, the social network provider **106** may provide the user with an option to select privacy settings once for more than one of the networks and/or more than one category or subcategory. Accordingly, the user may select one set of privacy settings for both the university network and the geographical location network.

Although the social network provider **106** is described as being comprised of various components (the communications interface **204**, the display engine/GUI **206**, and the user profile database **208**), fewer or more components may comprise the social network provider **106** and still fall within the scope of various embodiments.

FIG. **3** illustrates a schematic diagram of an exemplary privacy settings engine **108**. A privacy setting selections component **302** receives the privacy settings selections from the user. For example, the user associated with the user device **102**A selects from various options related to privacy for one or more networks, categories, and/or subcategories. The privacy setting selections component **302** updates the user profile, such as the user profile stored in the user profile database **208**, with the privacy settings selected by the user.

A privacy summary templates component **304** utilizes the privacy setting selections to determine which privacy summary templates apply given the particular privacy setting selections from the user. For example, the privacy summary templates component **304** can match a privacy paragraph to each privacy setting selection, such as "only your friends." The privacy paragraph may change for privacy setting selections in different categories. For example, the privacy paragraph for "only your friends" in a photo album category may be different from the privacy paragraph for "only your friends" in a contact information category. Alternatively, the privacy paragraph for one or more of the privacy settings selections may be shared among one or more categories. Any number of privacy summary templates may be provided.

A privacy summary generator **306** utilizes the privacy summary templates from the privacy summary templates component **304** to generate an entire privacy summary. According to some embodiments, the privacy summary templates component **304** comprises a database or other storage medium that stores the privacy summary templates, which the privacy summary generator **306** accesses in order to generate the privacy summary. The privacy summary generator may modify the privacy summary templates, in order to customize the privacy summary, according to some embodiments. For instance, the privacy summary generator **306** may insert the particular network name, such as Yale, San Jose, Calif., and so forth, into the privacy summary in order to customize the privacy summary for the particular user to whom the privacy setting selections are being explained via the privacy summary.

The privacy summary generator **306** may then forward the privacy summary to the display engine/GUI **206** for display to the user associated with the particular privacy summary. The privacy setting selections and the privacy summary are discussed in further detail in association with FIGS. **4** and **5**.

FIG. **4** shows a schematic diagram of an exemplary privacy setting selections screen **400**. A category of "contact information" **402** is displayed. Accordingly, the user may select from various privacy settings related to the user's contact information **402**. As discussed herein, the user may choose from various privacy settings related to any category or sub-

category, such as a bulletin board for the particular user, groups for the particular user, friends for the particular user, profile for the particular user, status for the particular user, photos for the particular user, and so forth.

In the screen **400** in FIG. **4**, the user can select privacy settings for the categories "preferred email" **404**, "mobile phone" **406**, and "friends" **408**. The contact information **402** category may include fewer or more categories or subcategories and still fall within the scope of various embodiments. Further, each category or subcategory, such as categories **404**, **406**, and **408**, on the screen **400** includes four options **410**, but fewer or more options, such as the options **410** on the screen **400**, may be provided and still fall within the scope of various embodiments. Once the user selects one or more of the options **410** for the contact information **402** category, the user profile database **208** is updated to reflect the privacy setting selections chosen from the options **410**.

As discussed herein, the display engine/GUI **206** may display the privacy settings selection **400** screen. Further, as also discussed herein, the user may input selections for various privacy setting selections associated with one or more categories other than the contact information **402** category shown in FIG. **4**. Accordingly, the user profile database **208** is updated with the user's privacy setting selections for each category and/or subcategory. The user profile and/or the privacy setting selections, directly, are utilized by the privacy summary generator **306** to generate the privacy summary. The display engine/GUI **206** is then utilized to display the privacy summary to the user, in order to better assist the user in understanding the consequences of the privacy setting selections chosen by the user.

Referring now to FIG. **5**, an exemplary privacy summary **500** is shown. As discussed herein, the privacy summary **500** utilizes the privacy setting selections from the user and explains, according to the category, the subcategory, and/or the network, what the user's selections from the privacy setting selections mean. For example, assume that the user at the user device **102**A selected the option "everyone from San Francisco, Calif., Social Network Provider, and Harvard" from options provided in association with a "profile" category (not shown) and the option **410** "only your friends" for the contact information **402** category, discussed in FIG. **4**. Accordingly, the privacy summary indicates to the user that people comprising the geographical location network "San Francisco, Calif.", people using or subscribed to the Social Network Provider's services, such as the social network provider **106** discussed herein, and people comprising the college network "Harvard" can access the profile for the user at the user device **102**A.

On the other hand, the privacy summary **500** also indicates to the user that since the user selected the option **410** "only your friends" for the contact information **402** category, the privacy setting selection of the option **410** "only your friends" means that only people comprising the category or the subcategory of "friends" can access the preferred email **404**, the mobile phone **406**, the friends **408** grouping, and other contact information such as, for example, the instant messenger address (not shown), the home phone (not shown), and the home address (not shown) associated with the profile for the user at the user device **102**A. Thus, people comprising "friends of your friends from San Francisco, Calif., Social Network Provider, and Harvard" and "everyone from San Francisco, Calif., Social Network Provider, and Harvard" may be able to access some of the contact information associated with the user's profile, but cannot access all of the contact information **402** for the user at the user device **102**A, such as the preferred email **404**, the mobile phone **406**, and/or any other contact information the user restricts via the privacy settings. Further, because the user at the user device **102**A restricted the privacy settings, only "friends of friends" can see the user's list of friends. Thus, the privacy summary in FIG. **5** explains that users accessing data via the social network provider **106** cannot view the user's list of friends unless the particular users happen to also be grouped in the "friends" of the user's "friends from Harvard" category, for instance.

The user may select an "edit settings" link **502** in order to edit the privacy setting selections chosen. The user can access the "edit settings" link **502** via the privacy summary **500** or the user can access the privacy setting selections in any other manner, such as by selecting a category or subcategory from the user's profile and modifying the privacy setting selections for the category or subcategory selected. As discussed herein, any type of networks, categories, subcategories, and privacy setting selections may be provided. Further, any type of privacy summary may be generated for explaining the privacy setting selections chosen by the user at the user device **102**A and what the particular privacy setting selections mean with respect to what other users can access about the user at the user device **102**A.

The privacy settings selection for the category of "photos" **504** is also explained in the exemplary privacy summary **500** shown in FIG. **5**. As discussed herein, different paragraphs explaining the privacy setting selections may be provided for each category, combined paragraphs may explain privacy setting selections for one or more categories, and so forth. One or more "edit settings" links **502** may be provided for allowing the user to change the privacy setting selections from the privacy summary **500**.

FIG. **6** illustrates a flow diagram of an exemplary process for dynamically generating a privacy summary. At step **602**, a user profile is generated. As discussed herein, the user profile may include one or more networks or separate user profiles may be generated for one or more networks, such as a geographical location network, a college network, and so forth. The user profile may include one or more categories or subcategories, such as photos, groups, friends, bulletin board, contact information, events, and so forth.

At step **604**, one or more privacy setting selections are received from a user associated with the profile. As discussed herein, the user may enter the privacy setting selections via the display engine/GUI **206** at the social network provider **106**. Thus, the user can control the information people see in the user's profile.

At step **606**, the profile associated with the user is updated to incorporate the one or more privacy setting selections. As discussed herein, the privacy setting selections are used to update the user profile in the user profile database **208** in order to reflect choices regarding privacy from the user and to associate those choices regarding privacy with the one or more networks, categories, and or subcategories specified by the user and/or the social network provider **106**.

At step **608**, a privacy summary for the profile is generated based on the one or more privacy setting selections. As discussed herein, the profile for the particular user making the privacy setting selections includes the privacy summary explaining to the particular user the consequences or meaning of the privacy setting selection. The privacy summary, such as the exemplary privacy summary **500** illustrated in FIG. **5**, may explain the privacy setting selections for each network, category, and/or subcategory. Further, the privacy summary **500** may combine explanations for the one or more networks, categories, and/or subcategories into one or more categories.

While various embodiments have been described above, it should be understood that they have been presented by way of

example only, and not limitation. For example, any of the elements associated with the privacy summary may employ any of the desired functionality set forth hereinabove. Thus, the breadth and scope of a preferred embodiment should not be limited by any of the above-described exemplary embodiments.

What is claimed is:

1. A method comprising:

accessing a profile for a user stored in an electronic database;

presenting a first user interface to the user;

receiving a plurality of privacy setting selections provided by the user using the first user interface, wherein the privacy settings selections identify, for each of a plurality of different categories of information associated with the user, one or more other users who can access that category of information;

updating the profile associated with the user to incorporate the plurality of privacy setting selections;

generating, by a processor, a narrative explanation of which other users can access which categories of information based on the privacy settings selections, wherein generating the narrative explanation comprises, for one or more of the privacy settings selections, selecting a narrative explanation template based on the privacy settings selection, wherein the narrative explanation template comprises text that identifies a group of other users who can access a category of information about the user profile based on the privacy settings selection; and

providing the narrative explanation to the user associated with the profile in a second user interface after receiving the privacy setting selections provided using the first user interface.

2. The method recited in claim **1**, further comprising displaying the narrative explanation to the user associated with the profile.

3. The method recited in claim **1**, further comprising displaying information associated with the profile to one or more other users based on the privacy setting selections.

4. The method recited in claim **3**, wherein the one or more other users comprise one or more groups.

5. The method recited in claim **3**, wherein the narrative explanation comprises the information associated with the profile that the one or more other users can access based on the privacy setting selections.

6. The method recited in claim **1**, wherein the one or more privacy settings are associated with one or more networks associated with the user.

7. The method recited in claim **6**, wherein the one or more privacy settings selections are associated with one or more categories associated with the one or more networks.

8. A system comprising:

a non-transitory computer-readable storage medium storing instructions comprising:

a profile generator configured to generate a profile for a user;

a communications interface configured to present a first user interface to the user and to receive a plurality of privacy setting selections provided by the user using the first user interface, wherein one or more of the privacy settings selections relates to at least a category identify, for each of a plurality of different categories of information associated with the user, and one or more other users who can access that category of information;

a user profile management module, coupled to the communications interface, configured to update the profile associated with the user to incorporate the plurality of privacy setting selections; and

a privacy settings engine, coupled to the user profile management module, configured to generate a narrative explanation of which other users can access which categories of information about the user based on the privacy settings selections, wherein the privacy settings engine is configured to generate a narrative explanation for the profile based on the one or more privacy setting selections by, for one or more of the privacy settings selections, selecting a narrative explanation template based on the privacy settings selection, wherein the narrative explanation template comprises text that identifies a group of other users who can access a category of information about the user profile based on the privacy settings selection;

wherein the communications interface is further configured to provide the narrative explanation to the user associated with the profile in a second user interface after receiving the privacy setting selections via the first user interface; and

a processor configured to execute the instructions.

9. The system recited in claim **8**, further comprising a display engine configured to display the narrative explanation to the user associated with the profile.

10. The system recited in claim **8**, wherein a display engine is configured to display information associated with the profile to one or more other users based on the privacy setting selections.

11. The system recited in claim **10**, wherein the one or more other users comprise one or more groups.

12. The system recited in claim **10**, wherein the narrative explanation comprises the information associated with the profile that the one or more other users can access based on the privacy setting selections.

13. The system recited in claim **12**, wherein the narrative explanation of the information associated with the profile that the one or more other users can access based on the privacy setting selections includes an explanation by category of photos associated with the profile that the one or more other users can access based on the privacy setting selections.

14. The system recited in claim **8**, wherein the one or more privacy settings are associated with one or more networks associated with the user.

15. The system recited in claim **14**, wherein the one or more privacy settings selections are associated with one or more categories associated with the one or more networks.

16. A non-transitory computer program embodied on a computer readable storage medium having encoded thereon instructions for dynamically generating a privacy summary comprising:

accessing a profile for a user stored in an electronic database;

presenting a first user interface to the user;

receiving a plurality of privacy setting selections provided by the user using the first user interface, wherein the privacy settings selections identify, for each of a plurality of different categories of information associated with the user, one or more other users who can access that category of information;

updating the profile associated with the user to incorporate the plurality of privacy setting selections;

generating, by a processor, a narrative explanation of which other users can access which categories of information based on the privacy settings selections, wherein generating the narrative explanation comprises, for one or more of the privacy settings selections, selecting a

narrative explanation template based on the privacy settings selection, wherein the narrative explanation template comprises text that identifies a group of other users who can access a category of information about the user profile based on the privacy settings selection; and

providing the narrative explanation to the user associated with the profile in a second user interface after receiving the privacy setting selections provided using the first user interface.

17. The computer program recited in claim **16**, further comprising displaying the narrative explanation to the user associated with the profile.

18. The computer program recited in claim **16**, further comprising displaying information associated with the profile to one or more other users based on the privacy setting selections.

19. The computer program recited in claim **18**, wherein the one or more other users comprise one or more groups.

20. The computer program recited in claim **18**, wherein the narrative explanation comprises the information associated with the profile that the one or more other users can access based on the privacy setting selections.

21. The computer program recited in claim **16**, wherein the one or more privacy settings are associated with one or more networks associated with the user.

22. The computer program recited in claim **21**, wherein the one or more privacy settings selections are associated with one or more categories associated with the one or more networks.

* * * * *

US008225376C1

(12) **EX PARTE REEXAMINATION CERTIFICATE** (9545th)

United States Patent
Zuckerberg et al.

(10) **Number: US 8,225,376 C1**
(45) **Certificate Issued: Mar. 5, 2013**

(54) **DYNAMICALLY GENERATING A PRIVACY SUMMARY**

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(73) Assignee: **Facebook, Inc.**, Palo Alto, CA (US)

Reexamination Request:
No. 90/012,658, Sep. 14, 2012

Reexamination Certificate for:
Patent No.: **8,225,376**
Issued: **Jul. 17, 2012**
Appl. No.: **11/493,291**
Filed: **Jul. 25, 2006**

(51) **Int. Cl.**
H04L 29/06 (2006.01)
(52) **U.S. Cl.** **726/4**; 715/731
(58) **Field of Classification Search** ..... None
See application file for complete search history.

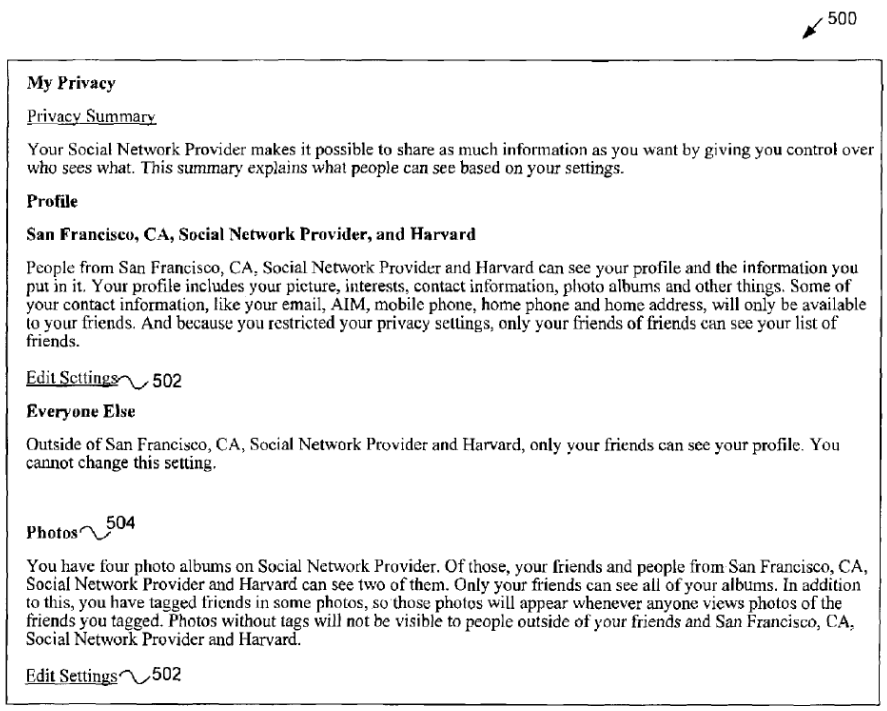
(56) **References Cited**

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 90/012,658, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner — Adam Basehoar

(57) **ABSTRACT**

A system and method for dynamically generating a privacy summary is provided. The present invention provides a system and method for dynamically generating a privacy summary. A profile for a user is generated. One or more privacy setting selections are received from the user associated with the profile. The profile associated with the user is updated to incorporate the one or more privacy setting selections. A privacy summary is then generated for the profile based on the one or more privacy setting selections.



EX PARTE REEXAMINATION CERTIFICATE ISSUED UNDER 35 U.S.C. 307

NO AMENDMENTS HAVE BEEN MADE TO THE PATENT

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

The patentability of claims **1**, **8** and **16** is confirmed.

Claims **2-7**, **9-15** and **17-22** were not reexamined.

* * * * *

US 20120203838A1

(19) **United States**

(12) **Patent Application Publication**

Zuckerberg et al.

(10) **Pub. No.: US 2012/0203838 A1**

(43) **Pub. Date: Aug. 9, 2012**

(54) **DYNAMICALLY UPDATING MEDIA CONTENT FOR DISPLAY TO A USER OF A SOCIAL NETWORK ENVIRONMENT BASED ON USER INTERACTIONS**

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(21) Appl. No.: **13/448,157**

(22) Filed: **Apr. 16, 2012**

Related U.S. Application Data

(63) Continuation of application No. 11/503,037, filed on Aug. 11, 2006, now Pat. No. 8,171,128.

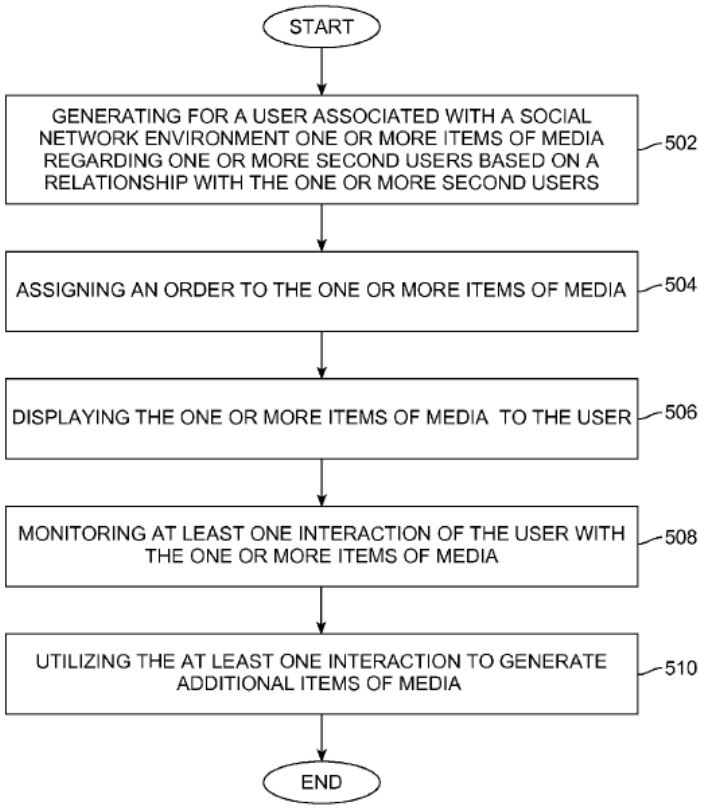
Publication Classification

(51) **Int. Cl.**
G06F 15/16 (2006.01)

(52) **U.S. Cl.** **709/204**

(57) **ABSTRACT**

A system and method provides dynamically selected media content to someone using an electronic device in a social network environment. Items of media content are selected for the user based on his or her relationships with one or more other users. The user's relationships with other users are reflected in the selected media content and its format. An order is assigned to the items of media content, for example, based on their anticipated importance to the user, and the items of media content are displayed to the user in the assigned order. The user may change the order of the items of media content. The user's interactions with media content available in the social network environment are monitored, and those interactions are used to select additional items of media content for the user.



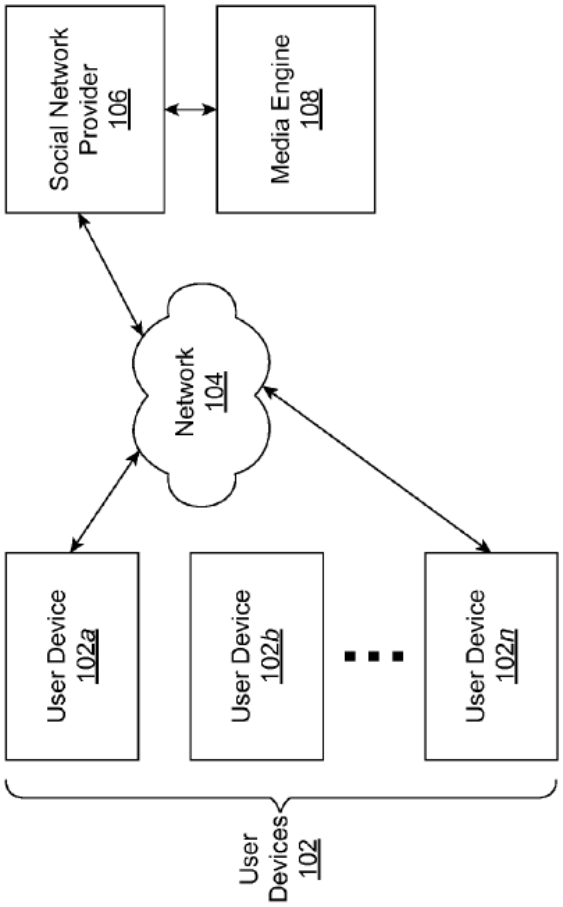

Social Network Provider 106
Media Engine 108
Network 104
User Device 102a
User Device 102b
User Device 102n
User Devices 102

FIG. 1

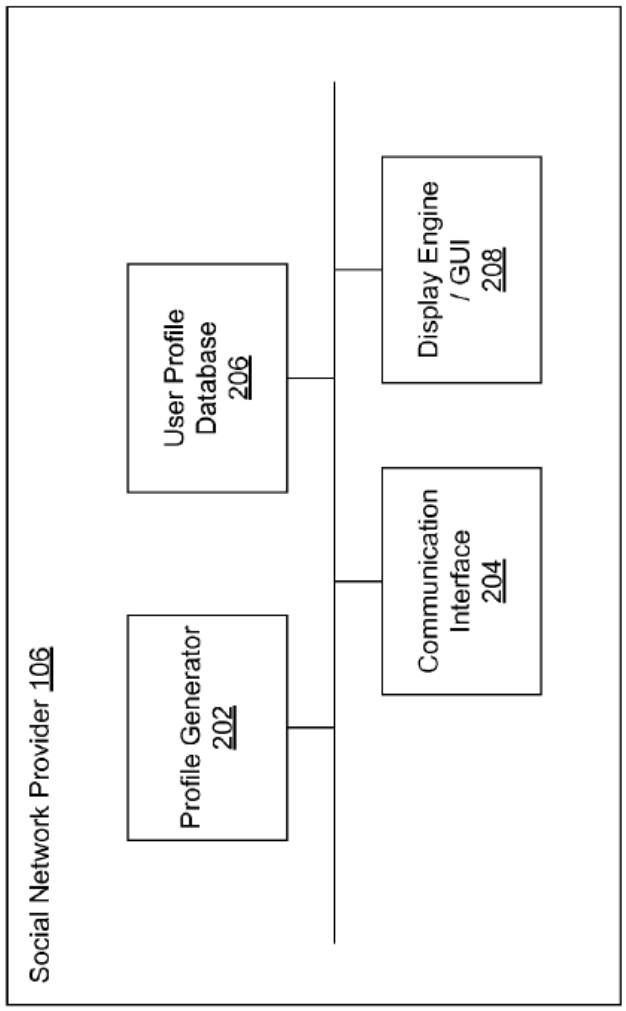

Social Network Provider 106
Profile Generator 202
User Profile Database 206
Communication Interface 204
Display Engine / GUI 208

FIG. 2

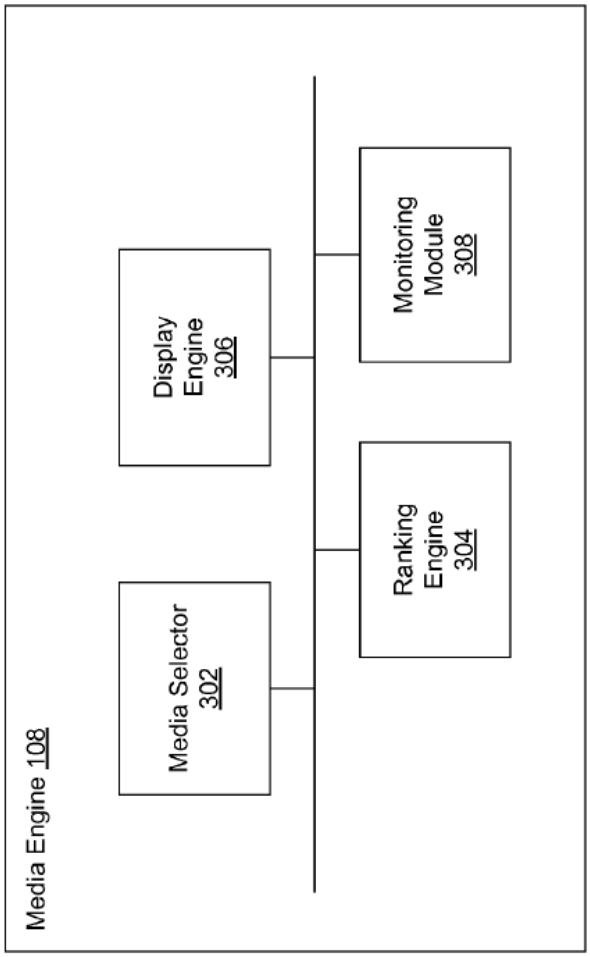
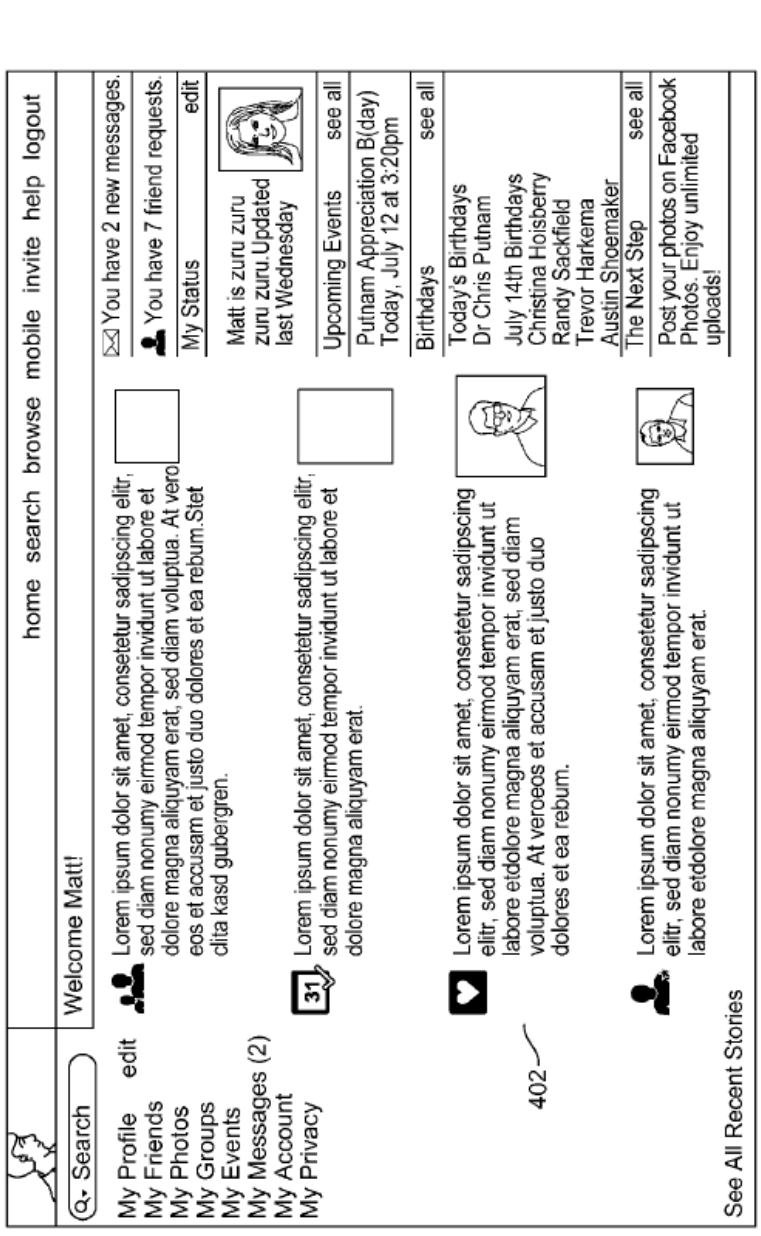

Media Engine 108
Media Selector 302
Display Engine 306
Ranking Engine 304
Monitoring Module 308

FIG. 3


400
home search browse mobile invite help logout
Welcome Matt!
Search
My Profile edit
My Friends
My Photos
My Groups
My Events
My Messages (2)
My Account
My Privacy
Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum.Stet clita kasd gubergren.
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Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore etdolore magna aliquyam erat.
See All Recent Stories
402
You have 2 new messages.
You have 7 friend requests.
My Status edit
Matt is zuru zuru zuru zuru.Updated last Wednesday
Upcoming Events see all
Putnam Appreciation B(day) Today, July 12 at 3:20pm
Birthdays see all
Today's Birthdays
Dr Chris Putnam
July 14th Birthdays
Christina Hoisberry
Randy Sackfield
Trevor Harkema
Austin Shoemaker
The Next Step see all
Post your photos on Facebook Photos. Enjoy unlimited uploads!

FIG. 4

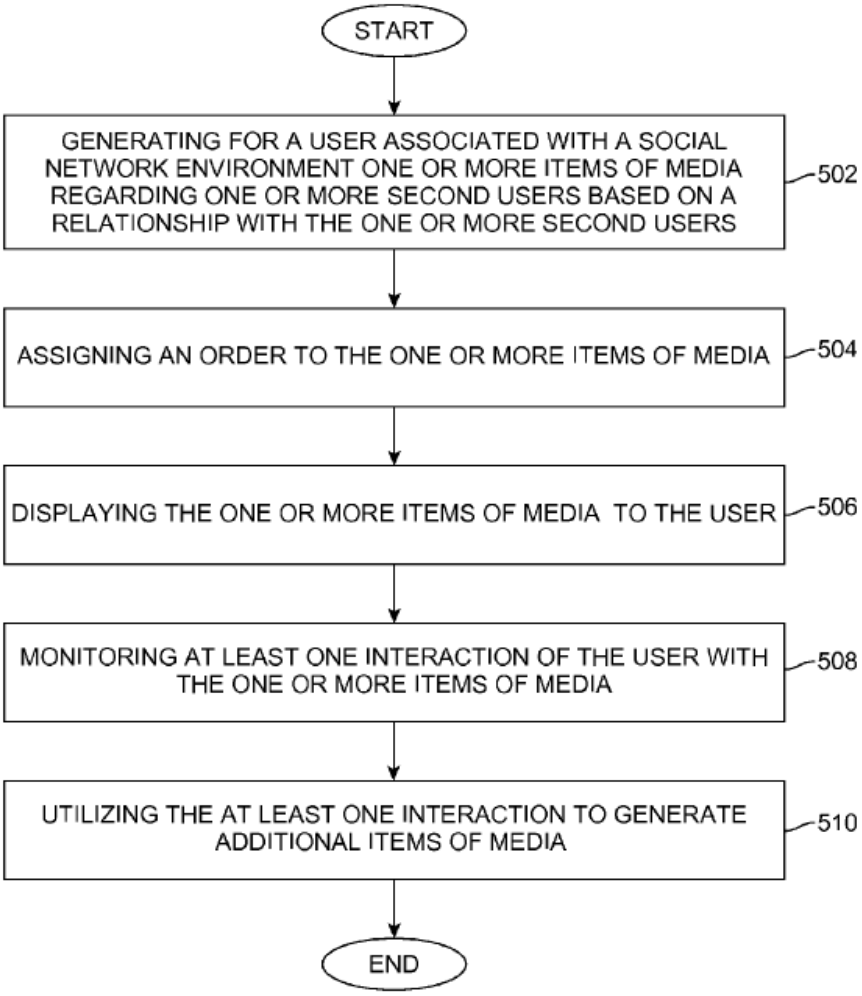
START
GENERATING FOR A USER ASSOCIATED WITH A SOCIAL NETWORK ENVIRONMENT ONE OR MORE ITEMS OF MEDIA REGARDING ONE OR MORE SECOND USERS BASED ON A RELATIONSHIP WITH THE ONE OR MORE SECOND USERS
502
ASSIGNING AN ORDER TO THE ONE OR MORE ITEMS OF MEDIA
504
DISPLAYING THE ONE OR MORE ITEMS OF MEDIA TO THE USER
506
MONITORING AT LEAST ONE INTERACTION OF THE USER WITH THE ONE OR MORE ITEMS OF MEDIA
508
UTILIZING THE AT LEAST ONE INTERACTION TO GENERATE ADDITIONAL ITEMS OF MEDIA
510
END

FIG. 5

DYNAMICALLY UPDATING MEDIA CONTENT FOR DISPLAY TO A USER OF A SOCIAL NETWORK ENVIRONMENT BASED ON USER INTERACTIONS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application is a continuation of U.S. application Ser. No. 11/503,037, filed on Aug. 11, 2006, and entitled "Communicating a Newsfeed of Media Content Based on a Member's Interactions in a Social Network Environment," which is hereby incorporated by reference in its entirety. The present application also incorporates by reference the following applications in their entirety: U.S. Application No. 60/750,844, filed on Dec. 14, 2005, for "Systems and Methods for Social Mapping," U.S. Application No. 60/753,810, filed on Dec. 23, 2005, for "Systems and Methods for Social Timeline," U.S. application Ser. No. 11/493,291, filed on Jul. 25, 2006, for "Systems and Methods for Dynamically Generating a Privacy Summary," U.S. patent application Ser. No. 11/502,757 filed on Aug. 11, 2006, for "Systems and Methods for Generating Dynamic Relationship-Based Content Personalized for Members of a Web-Based Social Network," U.S. patent application Ser. No. 11/503,093, filed on Aug. 11, 2006, for "Systems and Methods for Measuring User Affinity in a Social Network Environment," and U.S. patent application Ser. No. 11/503,242, filed on Aug. 11, 2006, for "System and Method for Dynamically Providing a News Feed About a User of a Social Network."

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates generally to media presentation, and more particularly to systems and methods for presenting dynamically selected media content to a user of an electronic device in a social network environment.

[0004] 2. Description of Related Art

[0005] Conventionally, users of networking websites connect with other users and provide information about themselves. For example, a user may post contact information, background information, current job position, hobbies, and so forth. Other users may contact the posting user based on common interests, or for any other reason.

[0006] Recently, social networking websites have developed systems for tailoring connections between various users. For example, users may be grouped based on geographical location, job type, and so forth. Social networking offers users the opportunity for frequent, automatic notification of changes in the information posted by other users.

[0007] There are existing mechanisms that allow a user to display information about other users. Some mechanisms may allow the user to select particular items of media content for immediate viewing. Typically, however, these items of media content are disparate and disorganized. In other words, the user must spend time researching a topic by searching for, identifying, and reading individual items of media content that are not presented in a coherent, consolidated manner. Further, often the user remains unaware of the existence of some items of media content that were not captured in the user's research. For example, in a typical social networking environment, one would have to look up another user and click on various links to find information about the other user.

[0008] In addition, there are news feeds to which one can subscribe that can provide information on a particular topic via automatic download to an electronic device associated with a user. However, the downloaded information is not selected and presented based on the user's relationships with other users, and does not occur within the context of a social network. What is desired is a way for a user of a social network automatically to receive items of media content that are dynamically selected and presented to the user based on his relationships with other users.

SUMMARY OF THE INVENTION

[0009] The present invention provides a system and method for providing dynamically selected media content to a user of an electronic device in a social network environment. Items of media content are selected for the user based on his or her relationships with one or more other users. The user's relationships with other users are reflected in the selected media content and its format. An order may be assigned to the selected items of media content, for example, based on their importance to the user, and the items of media content displayed to the user in that order. The user may change the order of the items of media content. The user's interactions with the items of media content and other items provided by the social network provider are monitored, and those interactions are used to select additional items of media content for the user. In a method according to one embodiment of the invention, the frequency of user interaction with other users and objects on the network is analyzed to identify events, relationships, news items and other objects of interest to the user, and to rank them in importance to the user. The results of this analysis are used to select, consolidate and tailor content for news stories to be presented to the user in a personalized, dynamic news feed that may be more interesting or desirable to the user because of its selection based upon the user's personal relationships.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. **1** is a diagram of an exemplary architecture for providing dynamically selected media to a user of an electronic device in a social network environment.

[0011] FIG. **2** is a block diagram of an exemplary social network provider.

[0012] FIG. **3** is a block diagram of an exemplary media engine.

[0013] FIG. **4** is an exemplary media display screen, such as might be displayed to a user in a social network environment.

[0014] FIG. **5** is a flow chart of an exemplary process for providing dynamically selected media to a user of an electronic device in a social network environment.

DETAILED DESCRIPTION OF THE INVENTION

[0015] A system and method is provided for presenting dynamically selected media content to a user of an electronic device in a social network environment. Items of media content are selected for the user based on his or her relationships with one or more other users, with whom the user is associated through a social network provider. The user's relationships with other users are reflected in the selected media content and its format. For example, media content concerning the user's brother, wife, or best friend from college may be presented to the user as being about "your brother," "your wife" and "your best friend from college," respectively.

Accordingly, the media content dynamically selected for and presented to the user is personalized in a way that would be less meaningful or interesting if viewed by someone other than the user.

[0016] An order is assigned to the selected media content, for example, based on its importance to the user, and the media content is displayed to the user in the assigned order. The user may change the order of the items of media content, for example, via a separate settings display that allows the user to prioritize and/or filter certain items of media content, and/or also by using a "drag-and-drop" function to organize stories dynamically on the media content display. The user's interactions with the media content and other items provided by the social network provider are monitored, and those interactions are used to select additional items of media content for the user. In a method according to one embodiment of the invention, the frequency of user interaction with other users and objects on the network is analyzed to identify events, relationships, news items and other objects of interest to the user, and to rank them in importance to the user as reflected in the descending order of the frequency of the user's interaction with other users. In a display according to such an embodiment, the results of this analysis are used to select, consolidate and tailor content for news stories to be presented to the user in a personalized, dynamic news feed that is more meaningful to the user because of its basis in the user's personal relationships.

[0017] FIG. **1** is a diagram of an exemplary architecture for presenting dynamically selected media to a user of an electronic device in a social network environment. User devices **102**, such as a user device **102***a*, a user device **102***b*, and a user device **102***n*, communicate over a network **104** with a social network provider **106**. The user devices **102***a*-**102***n* may comprise any device associated with one or more users, such as a cellular telephone, a personal digital assistant, a desktop or a laptop computer, and so forth. Any types of user devices **102** are within the scope of various embodiments.

[0018] The social network provider **106** may comprise any user or entity that provides social networking services, communication services, dating services, and so forth. For example, the social network provider **106** may host a website that allows one or more users at the user devices **102** to communicate with one another via the website. In one instance, the user associated with the user device **102***a* may communicate with the user associated with the user device **102***b* via a social networking website associated with the social network provider **106** that offers the user an opportunity to connect or reconnect with one or more other users that attended, for example, the same university as the user.

[0019] A media engine **108** is coupled to the social network provider **106**. In one embodiment, the media engine **108** can select items of media content based on the user's relationships with other users through the social network provider **106**. The media engine **108** analyzes the frequency of the user's interactions with other users through the social network provider **106** and with the selected items of media. The results of this analysis are used to rank the importance of the other users to the user, so that new items of media content are selected and displayed to the user in the order of the content's anticipated importance or interest to the user.

[0020] For example, a user at the user device **102***a* uses a cursor to click on items of media content related to his sister Abby very frequently, and to click on emails from his friend Bob somewhat less frequently. The items of media content selected by the media engine **108** will be dynamically presented to the user at the user device **102***a* with an importance ranking based on an analysis of the frequencies of the user's interactions with items of media content associated with his friends, so that items of media content associated with Abby will be presented first to the user at the user device **102***a*, followed by items of media content associated with Bob. For example, the items of media content may be news stories about the other users Abby and Bob. Such news stories would be presented to the user as stories about "your sister" and "your best friend," so that the wording and content of the stories would not be meaningful to someone other than the users.

[0021] In an embodiment not shown, the media engine **108** can receive media content preference settings selections from the users at the user devices **102**. The media engine **108** can save the media content preference settings to a profile associated with each user. Once the media content preference settings are selected by the user, the media engine **108** can use the media content preference settings to insure that items of media content concerning particular relationships between the user and other users are not displayed to the user.

[0022] The users at the user devices **102** can group other users, events or objects according to categories, such as "friends", "school", "geography", "business", and so forth, and select a media content preference setting applicable to an entire category; any type of grouping may be employed by the user and/or the social network provider **106**. Further, according to some embodiments, the user may make media content preference settings applicable to individual other users, events or objects. For instance, the user may select media content preference settings for Jane, media content preference settings for John, and/or media content preference settings for groups of users, which may or may not include Jane and John.

[0023] Referring now to FIG. **2**, a block diagram of an exemplary system for providing a social network **106** is illustrated. The social network provider **106** may comprise a server, a client device, or any other device.

[0024] The social network provider **106** includes a profile generator **202** for creating the profile for the user, as discussed herein. For example, the user may provide contact information, friends, photos, and so forth to associate with the profile for the user. The profile generator **202** utilizes the information provided by the user to create the profile (i.e., the user profile). As discussed herein, the profile may include one or more categories or subcategories and news priority settings selections may be provided for each of the one or more categories or subcategories.

[0025] The social network provider **106** includes a communications interface **204** for communicating with the user devices **102**, such as the user devices **102***a*-**102***n* described herein, over the network **104**. The user devices **102** communicate various types of information, such as media content preference settings selections, groupings of other users, and so forth to the social network provider **106** via the communications interface **204**. Any type of communications interface **204** is within the scope of various embodiments.

[0026] A user profile database **206** is provided for storing data associated with each of the users, such as the users associated with the user devices **102***a*-**102***n*, in the user profiles created by the profile generator **202**. When the users at the user devices **102** select media content preference settings to associate with their user profiles, the user profile database

206 updates the user data associated with each user profile. Accordingly, the media content preference settings selections are stored in association with each user profile. The user profiles and/or the media content preference settings selections may be stored, modified, added, and so forth to any storage medium, according to some embodiments.

[0027] A display engine/GUI **208** may also be provided by the social network provider **106**. The display engine/GUI **208** displays dynamically selected items of media, the user's profile, and so forth to a user of an electronic device in a social network environment to the users associated with the user devices **102**. The users can interact with the social network provider **106** via the display engine/GUI **208**. For example, the users can access the dynamically selected items of media, their own user profile, other items of media content available via the social network provider, select media content preference settings, and so forth via the display engine/GUI **208**.

[0028] Although the social network provider **106** is described as being comprised of various components (the profile generator **202**, the communications interface **204**, the user profile database **206**, and the display engine/GUI **208**), fewer or more components may comprise the social network provider **106** and still fall within the scope of various embodiments.

[0029] FIG. **3** is a block diagram of an exemplary media engine **108**. A media selector **302** gathers items of media content available through the social network provider, consolidates them and prepares them for presentation to the user. For example, the media selector **302** finds four items of media content associated with Abby and six items of media content associated with Bob, arranges them in the order provided by the ranking engine **304**, formats them in language intelligible only to the user as discussed above, and presents them to the user via the display engine **306**.

[0030] For example, in some embodiments the media selector **302** can identify items of media content associated with relationships, events or objects that receive high rankings from the ranking engine **304**, locate information related to the items of media content associated with the 20 relationships, events or objects of greatest interest to the user, and consolidate that information into content for personalized, dynamic presentation on those 20 topics.

[0031] A ranking engine **304** analyzes the frequency of user actions associated with particular relationships, events and objects, or categories or subcategories of relationships, events or objects made available via the social network provider **106**. According to some embodiments, the ranking engine **304** comprises a database or other storage medium that stores user interaction data. Alternatively, the monitoring module **308** comprises a database or other storage medium that stores user interaction data. The ranking engine **304** examines the user interaction data, uses an algorithm to weight the items of media content associated with relationships, events and objects, individually and/or in categories relative to the frequency of user interaction with these items of media. The ranking engine **304** orders the items of media content based on the measured frequencies of user interaction, generating a list of the items of media content reflecting their importance to the user. For example, the items of media content may be arranged in descending order of their importance to the user, in that a highest frequency of user interactions with items of media content associated with a particular relationship results in items of media content pertaining to that relationship being listed first. Alternatively, any algorithm could be used by the ranking engine, to generate other orders for the items of media content on other bases. In some embodiments, the order generated for the items of media content is based on the user affinity described in U.S. application Ser. No. 11/503,093, cited above.

[0032] Because user interest may vary over short and long timescales, the weighting may change as a function of time in some embodiments. For example, a user planning a trip may be very interested in news of other users who have traveled recently, in news of trips identified as events by other users, and in travel information, and then be much less interested in these relationships, events, objects, or categories or subcategories thereof upon his return. Thus, items of media content associated with another user who has traveled recently may receive a large weighting relative to other items of media, and the weighting will decay steeply so that the weighting is low by the time of the user's return. Alternatively, the weighting associated with individual relationships, events and objects, or categories or subcategories thereof that are of long-term interest may remain steadily high.

[0033] A display engine **306** receives the consolidated, ordered items of media content from the media selector **302** and creates a presentation of personalized, dynamically selected media that may be most meaningful to the user because of its basis in the user's personal relationships. For example, the display engine **306** may personalize a media item topic heading to information about a particular relationship, such as that between the user and his brother, and modify the content of the media item so that it is about "your brother." Any number of such translations may be used to tailor the display to the user based on his relationships with other users. In some embodiments, the presentation of personalized, dynamically selected media that may be most meaningful to the user because of its basis in the user's personal relationships may be formatted by the media selector **302**, and forwarded with modifications completed to the display engine **306**.

[0034] According to some embodiments, the display engine **306** comprises a database or other storage medium that stores translation data, which the display engine **306** accesses in order to create a personalized, dynamic news feed, which immediately informs the user of any new items of media content introduced to the social network environment that may be of interest to the user. The display engine **306** may then forward the news feed to the display engine/GUI **208** for display to the user associated with the particular news feed display. The immediately updated display is discussed in further detail in association with FIG. **4**. In some embodiments, the media selector **302** comprises the database or other storage medium that stores translation data. In some embodiments, the display engine/GUI **208** may be identical with the display engine **306**.

[0035] A monitoring module **308** tracks user interactions with items of media content made available via the social network provider **106** to determine which relationships, events and objects are most interesting to the user by measuring the frequency of the user's interactions with the items of media content available through the social network provider. The frequency of user actions associated with particular relationships, events and objects, or categories or subcategories of relationships, events or objects is recorded. According to some embodiments, the monitoring module **308** comprises a database or other storage medium that stores interaction data, which the ranking engine **304** accesses so that the ranking

engine **304** can order the items of media content based on the measured frequencies of user interaction, generating a list of the items of media content reflecting their importance to the user. For example, the monitoring module can count the number of times the user accesses email from his brother, or the number of times the user clicked on dynamically selected items of media content reflecting news about his best friend.

[0036] FIG. **4** shows an exemplary presentation screen **400** of dynamically selected media content to a user of an electronic device in a social network environment. As discussed herein, the presentation **400** of personalized, dynamically selected media content utilizes the user action analysis generated by the ranking engine **304** to present news gathered by the media selector **302** and organized by the ranking engine **304** (or alternatively, organized by the media selector **302**) to the user in a coherent, up-to-date form for easy comprehension. Further, the news has been processed to minimize redundancy and presented in a narrative form by the media selector **302** or alternatively, by the display engine **306**. (In FIG. **4** neither Brittney nor Megan has a special relationship with the user. As discussed herein, if desired, the screen could say, "your sister" for Brittney, or "your best friend" for Megan, for example.)

[0037] Four dynamically selected items of media content based on the user's relationships with other users **402** are displayed. In the presentation **400** in FIG. **4**, the user's most important relationships are with Megan, Brittney and the group Country Music Listeners. The weighting of user interactions with items of media content associated with these relationships resulted in the item of media reflecting two of these three most important relationships being presented at the top of the display, followed by items of media content (here, news stories) about Megan, then other news stories about Brittney.

[0038] As discussed herein, the display engine/GUI **208** may display the presentation **400**. Further, as also discussed herein, the user may input selections for various media content preference setting selections associated with one or more relationships associated with items of media content in the social network environment. Accordingly, the user profile database **208** is updated with the user's media content preference setting selections for each relationship. The user interaction analysis and the user profile are utilized by the media selector **302** to create the presentation of personalized, dynamically selected media. The display engine/GUI **306** is then utilized to display the personalized, dynamic news feed to the user, in order to keep the user up to date on relationships, events and objects of interest to the user as indicated by the media content preference setting selections chosen by the user and the analysis selected by the ranking engine **304**.

[0039] FIG. **5** illustrates a flow diagram of an exemplary process for providing dynamically selected media to a user of an electronic device in a social network environment. At step **502** one or more items of media content regarding one or more second users based on a relationship with the one or more second users is selected for a user associated with a social network environment. As discussed herein, the relationship may include relationships with one or more individual users, or relationships with categories of users such as those in a geographical location network, a college network, and so forth. The items of media content may include one or more categories or subcategories, such as photos, event notices, invitations, bulletin board postings, contact information, emails, and so forth.

[0040] At step **504**, an order is assigned to the one or more items of media content selected for the user. As discussed herein, a user action analysis is generated by tracking user actions and recording the frequencies of those actions with items of media content associated with various relationships, and ranking the various relationships in importance to the user. For example, a user interested in learning about the activities of his favorite group, such as a group of fellow college alumni near a reunion date, may click on items of media content associated with fellow college alumni with high frequency over a few days or weeks. The high-frequency of user action associated with fellow college alumni will result in a rank of high importance to the user for items of media content associated with fellow college alumni. In some embodiments not shown, the user may change the order of the items of media content, for example, via a separate settings display that allows the user to prioritize and/or filter certain items of media content, and/or also by using a "drag-and-drop" function to organize stories dynamically on the media content display.

[0041] At step **506** the one or more items of media content are displayed to the user in a consolidated, tailored form based on the order determined by the user interaction analysis. In the example discussed in the preceding paragraph, items of media content associated with fellow college alumni will be presented near the top of the display.

[0042] At step **508**, at least one interaction of the user with items of media content in the social network environment is monitored. These items of media content may be from those selected by the media selector **302**, but may also be any other media content available through the social network provider **106** accessed or viewed by the user. As discussed herein, the monitored frequencies of user interactions with items of media content associated with the user's relationships with other users are provided to the ranking engine to determine the order in which items of media content should be presented to the user.

[0043] At step **510**, the monitoring of the at least one interaction of the user with items of media content in the social network environment is utilized to select additional items of media content for dynamic presentation to the user. As discussed herein, in some embodiments the ranked items of media content are converted into a news feed display, such as the exemplary presentation **400** illustrated in FIG. **4**. The presentation **400** may combine content from the one or more relationships, networks, categories, and/or subcategories into one or more items of media content or categories of items of media.

[0044] While various embodiments have been described above, it should be understood that they have been presented by way of example only, and not limitation. For example, any of the elements associated with the dynamically selected media presentation may employ any of the desired functionality set forth hereinabove. Thus, the breadth and scope of a preferred embodiment should not be limited by any of the above-described exemplary embodiments.

[0045] Embodiments of this invention may also include a computer readable medium having embodied thereon a program, the program being executable by a processor for performing a method, as described herein, for providing dynamically selected media content to a user of an electronic device in a social network environment

What is claimed is:

1. A method comprising:

storing in a database a user profile for a viewing user of a social network system, the user profile including an identification of a plurality of other users of the social network with whom the viewing user has established a connection;

sending a newsfeed comprising a plurality of news stories selected based on the viewing user's affinity for content in the plurality of news stories to a user device for display to the viewing user, at least one of the news stories comprising a description about an action taken by at least one of the other users of the social networking system with whom the viewing user has established a connection;

monitoring one or more interactions between the viewing user of the social network system and at least one of: another user of the social network system and media content in the social network system;

updating the newsfeed to include one or more additional news stories selected based on the monitored interactions, at least one of the additional news stories describing an action taken by at least one of the other users of the social network system with whom the viewing user has established a connection; and

sending the updated newsfeed comprising the selected additional news stories to the user device for display to the viewing user in an order that is based at least in part on the viewing user's affinity for the selected additional news stories.

2. The method of claim **1**, wherein the order is also based in part on a preference setting in the user profile of the of the viewing user, the preference setting describing ordering of news stories in the newsfeed.

3. The method of claim **1**, wherein the viewing user's affinity for the selected additional news stories is based at least in part on frequencies with which the viewing user interacts with other users of the social networking system taking actions described by the additional news stories.

4. The method of claim **1**, wherein the viewing user's affinity for the selected additional news stories is based at least in part on frequencies with which the viewing user interacts with media content associated with other users of the social networking system with whom the viewing user has established a connection.

5. The method of claim **1**, wherein the viewing user's affinity for a selected news story is based in part on a frequency with which the viewing user interacts with a user of the social network system taking an action described in the selected news story.

6. The method of claim **1**, wherein the monitoring comprises recording the viewing user's actions associated with particular relationships, events, objects, categories of relationships, subcategories of relationships, categories of events, categories of objects, subcategories of events or subcategories of objects.

7. The method of claim **6**, wherein the viewing user's affinity for the selected additional news stories is based at least in part on a frequency of the viewing user's actions associated with particular relationships, events, objects, categories of relationships, subcategories of relationships, categories of events, categories of objects, subcategories of events or subcategories of objects.

8. The method of claim **7**, wherein a weighting is associated with one or more of the particular relationships, the events, the objects, the categories of relationships, the subcategories of relationships, the categories of events, the categories of objects, the subcategories of events or the subcategories of objects

9. The method of claim **1**, wherein a monitored interaction is with one or more items of media content contained in a news story selected for the viewing user.

10. The method of claim **1**, wherein a monitored interaction is with one or more items of media content in the social network system outside of a news story that has been previously selected for the viewing user.

11. The method of claim **1**, wherein a monitored interaction includes the viewing user's interaction with an email.

12. A method comprising:

storing in a database a user profile for a viewing user of a social network system, the user profile including an identification of a plurality of other users of the social network with whom the viewing user has established a connection;

sending a newsfeed comprising a plurality of news stories about users of the social network system selected from news stories based on the viewing user's affinity for content in the plurality of news stories to a user device for display to the viewing user;

monitoring one or more interactions between the viewing user and at least one of: another user of the social network system and media content in the social network system;

selecting additional news stories from the plurality of news stories based on one or more of the monitored interactions, at least one of the additional news stories including a description about an action taken by at least one of the other users of the social network system with whom the viewing user has established a connection;

updating the newsfeed to include the selected additional news stories; and

sending the updated newsfeed including the selected additional news stories to the user device for display to the viewing user in an order that is based at least in part on the viewing user's affinity for the selected additional news stories.

13. The method of claim **12**, wherein the order is also based in part on a preference setting in the user profile of the of the viewing user, the preference setting describing ordering of news stories in the newsfeed.

14. The method of claim **12**, wherein selecting additional news stories from the plurality of news stories comprises:

determining, from the one or more monitored interactions, a frequency of the viewing user's actions associated with relationships between the viewing user and other users of the social networking system;

weighting news stories associated with the relationships between the viewing user and other users of the social networking system so a weight associated with a relationship is relative to a frequency of the viewing user's actions associated with the relationship;

ranking the news stories associated with the relationships based on the weight associated with the news stories; and

selecting the additional news stories from the ranked news stories.

15. The method of claim **14**, wherein ranking the news stories associated with the relationships is also based on one or more preference settings associated with one or more relationships, the one or more preference settings included in the user profile of the viewing user.

16. The method of claim **14**, wherein the weight associated with the relationship is modified based on changes in the frequency of the viewing user's actions associated with the relationship over time.

17. The method of claim **12**, wherein selecting additional news stories from the plurality of news stories comprises:

determining, from the one or more monitored interactions, a frequency of the viewing user's actions associated with objects in the social networking system;

weighting news stories associated with the objects in the social networking system so a weight associated with an object is relative to a frequency of the viewing user's actions associated with the object;

ranking the news stories associated with the objects based on the weight associated with the news stories; and

selecting the additional news stories from the ranked news stories.

18. The method of claim **12**, wherein the viewing user's affinity for the selected additional news stories is based at least in part on frequencies with which the viewing user interacts with media content associated with other users of the social networking system with whom the viewing user has established a connection.

19. The method of claim **12**, wherein the monitoring comprises recording the viewing user's actions associated with particular relationships, events, objects, categories of relationships, subcategories of relationships, categories of events, categories of objects, subcategories of events or subcategories of objects.

20. The method of claim **12**, wherein a monitored interaction is with one or more items of media content contained in a news story selected for the viewing user.

21. The method of claim **12**, wherein a monitored interaction is with one or more items of media content in the social network system outside of a news story that has been previously selected for the viewing user.

22. The method of claim **12**, wherein a monitored interaction includes the viewing user's interaction with an email.

23. A method comprising:

storing in a database a user profile for a viewing user of a social network system, the user profile including an identification of a plurality of other users of the social network with whom the viewing user has established a connection;

monitoring one or more interactions between the viewing user and at least one of: another user of the social network system and media content in the social network system;

selecting news stories from a plurality of news stories based on one or more of the monitored interactions, at least one of the news stories including a description about an action taken by at least one of the other users of the social network system with whom the viewing user has established a connection;

updating a newsfeed sent to the viewing user to include the selected news stories, the newsfeed including news stories about actions taken by one or more other users of the social network system with whom the viewing user has established a connection; and

sending the updated newsfeed comprising the selected news stories to the user device for display to the viewing user in an order that is based at least in part on the viewing user's affinity for the selected news stories.

24. The method of claim **23**, wherein the order is also based in part on a preference setting in the user profile of the of the viewing user, the preference setting describing ordering of news stories in the newsfeed.

25. The method of claim **23**, wherein selecting news stories from the plurality of news stories based on one or more of the monitored interactions comprises:

determining, from the one or more monitored interactions, a frequency of the viewing user's interactions with relationships between the viewing user and other users of the social networking system;

weighting news stories associated with the relationships between the viewing user and other users of the social networking system so a weight associated with a relationship is relative to a frequency of the viewing user's interactions with the relationship;

ranking the news stories associated with the relationships based on the weight associated with the news stories; and

selecting the additional news stories from the ranked news stories.

26. The method of claim **25**, wherein ranking the news stories associated with the relationships is also based on one or more preference settings associated with one or more relationships, the one or more preference settings included in the user profile for the viewing user.

* * * * *

Chapter 2

2.1 Management of Technological Innovation

The conception of an innovative idea begins with an inventor's research. Management can give the inventor the "tools and means" in order to conceive an innovation, which may grant a patent later. The patent attorney in combination with management can give instructions on this process. As soon as the decision to implement an invention is true, the management experts should be aware of this invention with all technical elements and advantages, with marketing sales and financial issues. The purpose is to prompt investors to think the possibility of using this current and new technology. On this ground all inventors who desire to commercially benefit from their invention should be in a position to answer questions and present the advantages of their invention against any other existing or new technology.

2.2 Why protect the Intellectual Property?

The intellectual property system ensures that both the inventor and the user are satisfied and benefits the society in a number of ways;

- broaden the knowledge and culture
- reinforces the production of quality goods and services under fair competition
- encourages the economy and innovation

Patent systems have been adopted by many countries over the years because;

- The whole society and public ensures access to information, scientific and technical knowledge because the patent grant secures the inventor from competitors.
- They encourage innovation and investment.

- The limited duration of a patent encourages the commercialization of inventions and the public benefits from the invention soon.

2.3 Development and Technology Transfer

Intellectual Property encourages innovation and creates positive circumstances for foreign investment in goods and services.

In a technological world, many companies find it difficult to create new products and services in a demanding marketplace and be able to share ideas and work with partners, academics and sometimes competitors. That is the reason why the ensuring of Intellectual Property encourages the globally collaboration.

Business is the base of innovation and is important for the development, commercialization and diffusion of technology. And when governments consider ways for the transfer of technology, they should protect patents and try not to create additional burdens on intellectual property owners.

2.4 Strategic Development of IP

It is important for a successful business that the intellectual property system it has, ensures completely the business.

1.The marketing of the company should focus on the needs of the customers and research why competitive products fail to satisfy these needs.

2.Research and collaboration with universities and other companies.

3.Find the innovations which can be protected and knowhow to protect unpatented technology.

4.Grant a patent for innovations before any publication.

5.The intellectual property department of a business should include an engineering team, with scientists and engineers ,in order to search which technology can be patented or protected.

2.5 Business factors affecting Patentability

To determine in a company whether to protect an invention, a technical management team, the marketing and financial department of it, as a whole should;

- have scientists who conceive innovative products or are able to change the existing products.
- find a way to get informed of all innovations, the scientists are working on at the present.
- determine for each innovation whether to grant a patent according to the following criteria;
    - How serves the new technology the company?
    - Would a patent prevent a competitor from infringement?
    - Would this patent bring only cost or benefits, too?
    - How much time and money the invention demands?
    - Could this new product create a new market?

If the invention or technology is being placed in the global market, then it should be protected in the countries where:

1)The product is sold

2)An infringement may happen

2.6 The Organization International Chamber of Commerce

It is important, at this point of developing the subject of managing the technological innovation, to refer to an organization whose purpose is the protection and the management of innovative ideas.

2.6.1 What is the International Chamber of Commerce?

ICC is the world business organization, that speaks with authority on behalf of enterprises worldwide.

The fundamental mission of ICC is to promote open international trade and investment across frontiers and help business corporations meet the challenges and opportunities of globalization.

ICC has three main activities; rule setting, arbitration and policy. ICC has the authority in making voluntary rules, which are implemented in many transactions every day.

2.6.2 An action of ICC;

In a written representation dated 18 May 2009 to the Enlarged Board of Appeal of the European patent Office, "ICC reiterated its longstanding support for the patentability of computer implemented inventions, in that computer implemented inventions that solve a technical problem involve technical considerations and are therefore patentable provided the usual patentability criteria are met."

2.7 The today's Intellectual Property changes

The intellectual property changes due to;

1.The globalization of the economy.

There exist situations in which goods related to intellectual property rights, are sold without the permission of the rights' owner.

The majority of ICC members believe that "a regime of international exhaustion would on balance be more harmful than beneficial to international trade and investment and to innovation. Businesses have a legitimate interest for reasons relating to commercial strategy, quality control, brand reputation, safety in controlling the distribution of their goods across different markets to ensure that products tailored for one market are not sold in another."

2. The development of new technologies.

The new technologies; digital and communication technologies has led to the development of new products and new methods of infringement, too.

3. Changes in the ways businesses operate.

Intellectual property is used by businesses to support the marketing of goods and services.

The Intellectual Property market is growing. Intellectual Property Rights are owned mostly by small companies and universities. The buying and selling Intellectual Property is a common phenomenon. Trading of IP is a today's way of doing business.

2.8 According to ICC, what should be done to manage IP?

I.Business action

1.Business should implement programs to educate the international businesses and inventors on how to use patent rights and on how patent systems differ in different countries.

2.Business continues to assist on the future patent system for Europe, the Unitary Patent with its translation arrangements which is granted with one application and it has power over a Union of countries.

3.Business supports the European Commission's effort to establish an economical patent system across the Europe. Business emphasizes the need for cost effectiveness and the need for a language solution acceptable for business.

4.Business welcomed the entering into force on 1 May 2008 of the London Agreement as this should reduce significantly the translation costs for obtaining and validating European Patents.

5.Business must take an active part in the debate on the patent system and use the patent system as a tool for technological and economic progress and development in rich and in poor countries. Business should notice that the patent system encourages innovation. If the patent right is underestimated, companies will reduce investment in inventing, developing and commercializing new technology.

6.Professionals specializing in Intellectual Property Right systems, especially of brands and patents use different valuation methodologies.

7.Business should continue to explore opportunities to increase safe and legal accessibility of materials. Business encourages a dialogue focusing on systems for technically secure online

distribution of works and digital rights Management Technology to protect such distribution and foster innovation and creativity.

II. Government action

1.National patent offices should implement programs to educate the international business and inventors on how to use patent rights.

2.European member state governments should continue to support the work on a Unitary Patent and on a Unified Patent Court for patents service the needs of business.

3.Those governments who have not yet acceded to the London Agreement which reduces the translation requirements for granted European patents, are encouraged to do so, as soon as possible. Full accession to the Agreement will induce significant cost savings and reallocation of resources to research and development.

4.An increasing number of governments have established programs to encourage their enterprises to exploit their intellectual property assets. The valuation of intellectual property is seen as an important tool for enterprises. Government bodies in several countries provide services to help companies to raise funds based on Intellectual Property Rights.

5.To increase transparency for financial and technological markets several governments including Denmark, Germany and Japan as well as the European Commission are also encouraging companies to report their intellectual assets through guidelines and recommendations.

6.Intergovernmental organization such as WIPO and the UN Economic Commission for Europe organize seminars and compile resources.

Appendix

I.Contact the European Patent Office

Contracting states to the European Patent Convention

Contracting state
Extension state

Contracting state		since
AL	Albania	01.05.2010
AT	Austria	01.05.1979
BE	Belgium	07.10.1977
BG	Bulgaria	01.07.2002
CH	Switzerland	07.10.1977
CY	Cyprus	01.04.1998
CZ	Czech Republic	01.07.2002
DE	Germany	07.10.1977
DK	Denmark	01.01.1990
EE	Estonia	01.07.2002
ES	Spain	01.10.1986
FI	Finland	01.03.1996
FR	France	07.10.1977
GB	United Kingdom	07.10.1977
GR	Greece	01.10.1986
HR	Croatia	01.01.2008
HU	Hungary	01.01.2003
IE	Ireland	01.08.1992
IS	Iceland	01.11.2004
IT	Italy	01.12.1978
LI	Liechtenstein	01.04.1980
LT	Lithuania	01.12.2004
LU	Luxembourg	07.10.1977
LV	Latvia	01.07.2005
MC	Monaco	01.12.1991
MK	Former Yugoslav Republic of Macedonia	01.01.2009
MT	Malta	01.03.2007
NL	Netherlands	07.10.1977
NO	Norway	01.01.2008
PL	Poland	01.03.2004
PT	Portugal	01.01.1992
RO	Romania	01.03.2003
SE	Sweden	01.05.1978
SI	Slovenia	01.12.2002
SK	Slovakia	01.07.2002
SM	San Marino	01.07.2009
TR	Turkey	01.11.2000
European patent applications and patents can also be extended at the applicant's request to the following states:		
BA	Bosnia-Herzegovina	01.12.2004
ME	Montenegro	01.03.2010
RS	Serbia	01.11.2004

Contracting states to the European Patent Convention are automatically member states of the European Patent Organisation.

Image1 - www.epo.org

European Patent Office

Munich
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80469 Munich
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Fax +32 (0) 2 201 59-28

Image2- www.epo.org

Customer Services:
Tel. +49 (0) 89 2399-4636
info@epo.org

Guide for applicants:
www.epo.org/guide-for-applicants

Schedule of fees:
www.epo.org/fees

Online filing:
www.epoline.org

European patent attorneys:
www.epo.org/representatives

.

Searching for patent documents
www.espacenet.com

Patent information centres:
www.epo.org/patlib-centres

Image3- www.epo.org

II. Application to grant a patent in Europe

- From www.epo.org

http://www.epo.org/applying/forms-fees/forms.html

Europäisches Patentamt
European Patent Office
Office européen des brevets

Antrag auf Erteilung eines europäischen Patents
Request for grant of a European patent
Requête en délivrance d'un brevet européen

☐ Nachreichung von Form 1001 zu einer früher eingereichten Anmeldung nach Regel 40 (1) vom
Form 1001 filed further to a previous application under Rule 40(1) on
Dépôt du formulaire 1001 pour une demande déposée antérieurement au titre de la règle 40(1) en date du

☐ Bestätigung einer bereits durch Fax eingereichten Anmeldung vom
Confirmation of an application already filed by fax on
Confirmation d'une demande déjà déposée par téléfax le

bei / with / auprès de

Nur für amtlichen Gebrauch / For official use only / Cadre réservé à l'administration

1 Anmeldenummer / Application No. / N° de la demande	MKEY	
2 Tag des Eingangs (Regel 35 (2)) / Date of receipt (Rule 35(2)) / Date de réception (règle 35(2))	DREC	
3 Tag des Eingangs beim EPA (Regel 35 (4)) / Date of receipt at EPO (Rule 35(4)) / Date de réception à l'OEB (règle 35(4))	RENA	
4 Anmeldetag / Date of filing / Date de dépôt		

5 Es wird die Erteilung eines europäischen Patents und gemäß Artikel 94 die Prüfung der Anmeldung beantragt. /
Grant of a European patent, and examination of the application under Article 94, are hereby requested. /
Il est demandé la délivrance d'un brevet européen et, conformément à l'article 94, l'examen de la demande.

☒ EXAM 4

Prüfungsantrag in einer zugelassenen Nichtamtssprache / Request for examination in an admissible non-EPO language / Requête en examen dans une langue non officielle autorisée

5.1 Der Anmelder verzichtet auf die Aufforderung nach Regel 70 (2), zu erklären, ob die Anmeldung aufrechterhalten wird. /
The applicant waives his right to be asked whether he wishes to proceed further with the application (Rule 70(2)). /
Le demandeur renonce à être invité, conformément à la règle 70(2), à déclarer s'il souhaite maintenir sa demande.

☐ MEPA

AREF

6 Zeichen des Anmelders oder Vertreters (max. 15 Positionen) /
Applicant's or representative's reference (max. 15 keystrokes) /
Référence du demandeur ou du mandataire (max. 15 caractères ou espaces)

Anmelder / Applicant / Demandeur

APPR

7 Name / Nom

8 Anschrift / Address / Adresse

9 Zustellanschrift / Address for correspondence / Adresse pour la correspondance

TRAN | FILL

Zeichen des Anmelders / Applicant's reference / Référence du demandeur

EPA/EPO/OEB 1001.1 01.12

10 Staat des Wohnsitzes oder Sitzes /
State of residence or of principal place of business /
Etat du domicile ou du siège

11 Staatsangehörigkeit /
Nationality /
Nationalité

12 Telefon /
Telephone /
Téléphone

13 Fax /
Téléfax

14 Weitere(r) Anmelder auf Zusatzblatt /
Additional applicant(s) on additional sheet /
Autre(s) demandeur(s) sur feuille supplémentaire ☐

Vertreter / Representative / Mandataire

FREP

15 Name / Nom
(**Nur einen** Vertreter oder den Namen des Zusammenschlusses angeben, der in das Europäische Patentregister einzutragen ist und an den zugestellt wird) /
(Name **only one** representative or association of representatives, to be listed in the Register of European Patents and to whom communications are to be notified) /
(N'indiquer qu'**un seul** mandataire ou le nom du groupement de mandataires qui sera inscrit au Registre européen des brevets et auquelles les significations seront faites)

et al ☐

16 Geschäftsanschrift /
Address of place of business /
Adresse professionnelle

17 Telefon /
Telephone /
Téléphone

18 Fax /
Téléfax

19 Weitere(r) Vertreter auf Zusatzblatt /
Additional representative(s) on additional sheet /
Autre(s) mandataire(s) sur feuille supplémentaire ☐

Vollmacht / Authorisation / Pouvoir

GENA

20 ist beigefügt / is enclosed / joint ☐

21 Allgemeine Vollmacht ist registriert unter Nummer /
General authorisation has been registered under No. /
Un pouvoir général a été enregistré sous le numéro

Erfinder / Inventor / Inventeur

INVT 20

22 Der (die) Anmelder ist (sind) alleinige(r) Erfinder. /
The applicant(s) is (are) the sole inventor(s). /
Le(s) demandeur(s) est (sont) le(s) seul(s) inventeur(s). ☐

23 Erfindernennung in beigefügtem Schriftstück /
Designation of inventor attached /
Voir la désignation de l'inventeur ci-jointe ☐

24 **Bezeichnung der Erfindung / Title of invention / Titre de l'invention**

TIDE TIEN TIFR

Zeichen des Anmelders /
Applicant's reference /
Référence du demandeur

25 **Prioritätserklärung (Regel 52) und Recherchenergebnisse nach Regel 141(1) / Declaration of priority (Rule 52) and search results under Rule 141(1) / Déclaration de priorité (règle 52) et résultats de la recherche conformément à la règle 141 (1)**

PRIO

Eine Prioritätserklärung wird für die folgenden Anmeldungen abgegeben: / A declaration of priority is hereby made for the following applications: / Une déclaration de priorité est produite pour les demandes suivantes :

Die Recherchenergebnisse nach Regel 141 (1) sind beigefügt. / Search results under Rule 141(1) are attached / Les résultats de la recherche selon la règle 141(1) sont joints

Nur für amtlichen Gebrauch / For official use only / Cadre réservé à l'administration			
01			
02			
03			
04			

	Staat / State / Etat	*Anmeldetag / Date of filing / Date de dépôt*	*Aktenzeichen / File No. / N° de dépôt*	
01				☐
02				☐
03				☐
04				☐

25.1 Auf einem Zusatzblatt ist angegeben, dass weitere Prioritäten beansprucht werden und die entsprechenden Recherchenergebnisse nach Regel 141 (1) beigefügt sind. / Additional declaration(s) of priority and indication(s) of the attachment of corresponding search results (Rule 141(1)) on additional sheet. / Il est indiqué sur une feuille supplémentaire que d'autres priorités sont revendiquées et que les résultats correspondants de la recherche selon la règle 141(1) sont joints. ☐

25.2 Diese Anmeldung ist eine vollständige Übersetzung der früheren Anmeldung. / This application is a complete translation of the previous application. / La présente demande est une traduction intégrale de la demande antérieure. ☐ *01* ☐ *02* ☐ *03* ☐ *04* ☐ *andere / other / autres*

25.3 Es ist nicht beabsichtigt, eine (weitere) Prioritätserklärung einzureichen. / It is not intended to file a (further) declaration of priority. / Il n'est pas envisagé de produire une (autre) déclaration de priorité. ☐

26 **Bezugnahme auf eine früher eingereichte Anmeldung / Reference to a previously filed application / Renvoi à une demande déposée antérieurement**

EAPP

26.1 Es wird auf eine früher eingereichte Anmeldung Bezug genommen. Die Bezugnahme **ersetzt die Beschreibung und etwaige Zeichnungen** (Regel 40 (1) c), (2)). Die Anmeldung, auf die Bezug genommen wird, ist: / Reference is made to a previously filed application. That reference **replaces the description and any drawings** (Rule 40(1)(c), (2)). The application to which reference is made is the following: / Il est fait référence à une demande déposée antérieurement. Ce renvoi **remplace la description et, le cas échéant, les dessins** (règle 40(1)c), (2)). La demande à laquelle il est fait référence est la suivante : ☐

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Staat / State / Etat	*Anmeldetag / Date of filing / Date de dépôt*	*Aktenzeichen / File No. / N° de dépôt*

26.2 Die Bezugnahme auf die früher eingereichte Anmeldung **ersetzt auch die Patentansprüche** (Regel 57c)). / The reference to the previously filed application **also replaces the claims** (Rule 57(c)). / Le renvoi à la demande déposée antérieurement **remplace également les revendications** (règle 57c)). ☐

26.3 Eine **beglaubigte Abschrift** der früher eingereichten Anmeldung (Regel 40 (3)) / A **certified copy** of the previously filed application (Rule 40(3)) / Une **copie certifiée** conforme de la demande déposée antérieurement (règle 40(3)) ☐ ist beigefügt. / is attached. / est jointe. ☐ wird nachgereicht. / will be supplied later. / sera produite ultérieurement.

26.4 Eine **Übersetzung** der früher eingereichten Anmeldung (Regel 40 (3)) / A **translation** of the previously filed application (Rule 40(3)) / Une **traduction** de la demande déposée antérieurement (règle 40(3)) ☐ ist beigefügt. / is attached. / est jointe. ☐ wird nachgereicht. / will be supplied later. / sera produite ultérieurement.

27 **Teilanmeldung / Divisional application / Demande divisionnaire**

PANR

Die Anmeldung ist eine Teilanmeldung, die aus der folgenden früheren Anmeldung hervorgeht: / The application is a divisional application based on the following earlier application: / La présente demande constitue une demande divisionnaire relative à la demande antérieure suivante :

DFIL

Nummer der früheren Anmeldung / Number of earlier application / Numéro de la demande antérieure

Zeichen des Anmelders / Applicant's reference / Référence du demandeur

27.1 Datum des ersten Bescheids der Prüfungsabteilung zu der frühesten Anmeldung, zu der ein Bescheid ergangen ist (Regel 36 (1) a)): / Date of Examining Division's first communication in respect of the earliest application for which a communication has been issued (Rule 36(1)(a)): / Date de la première notification de la division d'examen relative à la demande la plus ancienne pour laquelle une notification a été émise (règle 36(1)a)) :

Datum / Date

Bei Abweichung von der in Feld 27 angegebenen Anmeldung ist die betreffende früheste Anmeldung: / If different from the application mentioned in Section 27, the relevant earliest application is: / Si la demande la plus ancienne concernée diffère de celle mentionnée à la rubrique 27, veuillez indiquer son numéro :

Nummer der betreffenden frühesten Anmeldung / Number of the relevant earliest application / Numéro de la demande la plus ancienne concernée

27.2 Datum des Bescheids, in dem die Prüfungsabteilung zum ersten Mal eingewandt hat, dass die frühere Anmeldung nicht den Erfordernissen des Artikels 82 genügt (Regel 36 (1) b)): / Date of communication in which the Examining Division has objected for the first time that the earlier application does not meet the requirements of Article 82 (Rule 36(1)(b)): / Date de la notification dans laquelle la division d'examen a objecté pour la première fois que la demande antérieure ne satisfait pas aux exigences de l'article 82 (règle 36(1)b)) :

Datum / Date

28 **Anmeldung nach Artikel 61 (1) b) / Article 61 (1) (b) application / Demande selon l'article 61 (1) b)**

☐ EANR

Es handelt sich um eine Anmeldung nach Artikel 61 (1) b). / The application is an Article 61(1)(b) application. / La présente demande constitue une demande selon l'article 61(1)b).

Nummer der früheren Anmeldung / Number of earlier application / Numéro de la demande initiale

29 **Patentansprüche / Claims / Revendications**

CLMS

Zahl der Patentansprüche / Number of claims / Nombre de revendications

29.1 ☐ wie beigefügt / as attached / telles que jointes en annexe

29.2 ☐ wie in der früher eingereichten Anmeldung (siehe Feld 26.2) / as in the previously filed application (see Section 26.2) / telles que figurant dans la demande déposée antérieurement (voir rubrique 26.2)

29.3 ☐ Die Patentansprüche werden nachgereicht. / The claims will be filed later. / Les revendications seront produites ultérieurement.

30 **Abbildungen / Figures / Figures**

DRAW 2

Zur Veröffentlichung mit der Zusammenfassung wird vorgeschlagen Abbildung Nr. / It is proposed that the abstract be published together with figure No. / Il est proposé de publier avec l'abrégé la figure n°

31 **Benennung von Vertragsstaaten / Designation of contracting states / Désignation d'Etats contractants**

DEST

Alle Vertragsstaaten die dem EPÜ **bei Einreichung** der europäischen Patentanmeldung angehören, gelten als benannt (Artikel 79 (1)). / All the contracting states party to the EPC **at the time of filing** of the European patent application are deemed to be designated (Article 79(1)). / Tous les Etats contractants qui sont parties à la CBE **lors du dépôt** de la demande de brevet européen sont réputés désignés (Article 79(1)).

Zeichen des Anmelders / Applicant's reference / Référence du demandeur

32 **Verschiedene Anmelder für verschiedene Vertragsstaaten** /
Different applicants for different contracting states /
Différents demandeurs pour différents Etats contractants

APPR 02

Name(n) des (der) Anmelder(s) und benannte Vertragsstaaten: /
Name(s) of applicant(s) and designated contracting states: /
Nom(s) du (des) demandeur(s) et des Etats contractants désignés :

33 **Erstreckung des europäischen Patents** /
Extension of the European patent /
Extension des effets du brevet européen

EXPT

Diese Anmeldung gilt als Antrag, die europäische Patentanmeldung und das darauf erteilte europäische Patent auf alle Nichtvertragsstaaten des EPÜ zu erstrecken, mit denen am Tag der Einreichung der Anmeldung Erstreckungsabkommen in Kraft sind. Der Antrag gilt jedoch als **zurückgenommen**, wenn die Erstreckungsgebühr nicht fristgerecht entrichtet wird. /
This application is deemed to be a request to extend the European patent application and the European patent granted in respect of it to all non-contracting states to the EPC with which extension agreements are in force on the date on which the application is filed. However, the request **is deemed withdrawn** if the extension fee is not paid within the prescribed time limit. /
La présente demande est réputée constituer une requête en extension des effets de la demande de brevet européen et du brevet européen délivré sur la base de cette demande à tous les Etats non parties à la CBE avec lesquels des accords d'extension sont en vigueur à la date du dépôt de la demande. Cette requête est toutefois **réputée retirée** si la taxe d'extension n'est pas acquittée en temps utile.

33.1 Es ist derzeit beabsichtigt, die Erstreckungsgebühr(en) für die nebenstehend angekreuzten Staaten zu entrichten. /
It is currently intended to pay the extension fee(s) for the states marked opposite with a cross. /
Il est actuellement envisagé de payer la (les) taxe(s) d'extension pour les Etats dont le nom est coché ci-contre.

Hinweis: Im automatischen Abbuchungsverfahren werden nur für die hier angekreuzten Staaten Erstreckungsgebühren abgebucht, sofern dem EPA nicht vor Ablauf der Zahlungsfrist ein anderslautender Auftrag zugeht.

Note: Under the automatic debiting procedure, extension fees will only be debited for states indicated here, unless the EPO is instructed otherwise before expiry of the period for payment.

Veuillez noter que dans le cadre de la procédure de prélèvement automatique des taxes d'extension, le compte est débité du montant dû seulement pour les Etats cochés ici, sauf instruction contraire reçue avant l'expiration du délai de paiement.

☐ **BA** Bosnien und Herzegowina /
Bosnia and Herzegovina /
Bosnie-Herzégovine

☐ **ME** Montenegro /
Montenegro /
Monténégro

☐ | |

☐ | |

(Platz für Staaten, mit denen nach Drucklegung dieses Formblatts Erstreckungsabkommen in Kraft treten oder für die am Anmeldetag der früheren Anmeldung Erstreckungsabkommen in Kraft waren (Artikel 76 (1)) / Space for states with which extension agreements enter into force after this form has been printed or for which extension agreements existed on the date of filing of the earlier application (Article 76(1)) / Espace prévu pour des Etats à l'égard desquels des accords d'extension entreront en vigueur après l'impression du présent formulaire ou étaient en vigueur à la date de dépôt de la demande antérieure (article 76(1)))

34 **Biologisches Material** / **Biological material** /
Matière biologique

☐ BIOM 1

34.1 Die Erfindung verwendet und/oder bezieht sich auf biologisches Material, das nach Regel 31 hinterlegt worden ist. /
The invention uses and/or relates to biological material deposited under Rule 31. /
L'invention utilise et/ou concerne de la matière biologique déposée conformément à la règle 31.

a Die nach Regel 31 (1) c) erforderlichen Angaben, d. h. die Hinterlegungsstelle und die Eingangsnummer, sind in den technischen Anmeldungsunterlagen enthalten auf /
The information required under Rule 31(1)(c), i.e. depositary institution and accession number, is given in the application's technical documents on /
Les indications visées à la règle 31(1)c), à savoir l'autorité de dépôt et le numéro d'ordre, figurent dans les pièces techniques de la demande à la / aux

Seite(n) / page(s)	*Zeile(n) / line(s) / ligne(s)*

b Ist die Eingangsnummer am Anmeldetag noch nicht bekannt, so sind die Hinterlegungsstelle und das (die) Bezugszeichen (Nummer, Symbole usw.) des Hinterlegers in den technischen Anmeldungsunterlagen zu entnehmen auf /
If the accession number is not yet known on the date of filing, for the depositary institution and the depositor's identification reference(s) (number, symbols, etc.) see the application's technical documents on /
Si le numéro d'ordre n'est pas encore connu à la date de dépôt, l'autorité de depôt et la (les) référence(s) d'identification (numéro ou symboles etc.) du déposant figurent dans les pièces techniques de la demande, à la/aux

Seite(n) / page(s)	*Zeile(n) / line(s) / ligne(s)*

☐ Die Angaben werden später mitgeteilt /
The information will be submitted later /
Les indications visées seront communiquées ultérieurement

34.2 Die Empfangsbescheinigung(en) der Hinterlegungsstelle /
The receipt(s) of deposit issued by the depositary institution /
Le(s) récépissé(s) de dépôt délivré(s) par l'autorité de dépôt

☐ ist (sind) beigefügt. /
is (are) enclosed. /
est (sont) joint(s).

☐ wird (werden) nachgereicht. /
will be filed later. / sera (seront) produit(s) ultérieurement.

Zeichen des Anmelders /
Applicant's reference /
Référence du demandeur

35 Falls das biologische Material nicht vom Anmelder, sondern von einem Dritten hinterlegt wurde /
If the biological material was deposited by a person other than the applicant /
Lorsque la matière biologique a été déposée par une personne autre que le demandeur

Name und Anschrift des Hinterlegers / Name and address of depositor / Nom et adresse du déposant

35.1 Ermächtigung nach Regel 31 (1) d) /
Authorisation under Rule 31(1)(d) /
L'autorisation prévue à la règle 31(1)d)

☐ ist beigefügt / is attached / est jointe ☐ wird nachgereicht / will be supplied later / sera produite ultérieurement

36 Verzicht auf die Verpflichtung des Antragstellers nach Regel 33 (2) in gesondertem Schriftstück /
Waiver of the right to an undertaking from the requester pursuant to Rule 33(2) attached /
Renonciation, sur document distinct, à l'engagement du requérant au titre de la règle 33(2) ☐

37 Gemäß Regel 32 (1) erklärt der Anmelder hiermit, dass der Zugang zu dem in den Feldern 34 und 35 genannten biologischen Material nur durch Herausgabe einer Probe an einen Sachverständigen hergestellt wird. /
The applicant hereby declares under Rule 32(1) that the biological material referred to in Sections 34 and 35 is to be made available only by the issue of a sample to an expert. /
Conformément à la règle 32(1), le demandeur déclare par la présente que l'accessibilité à la matière biologique mentionnée aux rubriques 34 et 35 ne peut être réalisée que par la remise d'un échantillon à un expert. ☐ BIOM 3

38 **Nucleotid- und Aminosäuresequenzen** /
Nucleotide and amino acid sequences /
Séquences de nucléotides et d'acides aminés SEQL 1

38.1 Die Beschreibung enthält ein Sequenzprotokoll nach Regel 30 (1). /
The description contains a sequence listing in accordance with Rule 30(1). /
La description contient un listage de séquences conformément à la règle 30(1). ☐

38.2 Das Sequenzprotokoll wird in elektronischer Form eingereicht. /
The sequence listing is filed in electronic form. /
Le listage de séquences est déposé sous forme électronique. ☐

38.3 Das Sequenzprotokoll wird auch auf Papier eingereicht. /
The sequence listing is also filed on paper. /
Le listage de séquences est aussi déposé sur papier. ☐

38.4 Soweit das Sequenzprotokoll auch auf Papier eingereicht wird, erklärt der Anmelder hiermit, dass die Sequenzprotokolle in elektronischer Form und auf Papier identisch sind. /
If the sequence listing is also filed on paper, the applicant hereby states that the sequence listings in electronic form and on paper are identical. /
Si le listage de séquences est aussi déposé sur papier, il est déclaré par la présente que le listage sous forme électronique et celui sur papier sont identiques. ☐

Sonstige Angaben / Further indications /
Indications supplémentaires

39 Zusätzliche Abschriften der im europäischen Recherchenbericht angeführten Schriftstücke werden beantragt. /
Additional copies of the documents cited in the European search report are requested. /
Prière de fournir des copies supplémentaires des documents cités dans le rapport de recherche européenne. ASOC

Anzahl der zusätzlichen Sätze von Abschriften /
Number of additional sets of copies /
Nombre de jeux supplémentaires de copies ☐

40 Die Rückerstattung der Recherchengebühr gemäß Artikel 9 (2) Gebührenordnung wird beantragt. /
Refund of the search fee under Article 9(2) of the Rules relating to Fees is requested. /
Le remboursement de la taxe de recherche est demandé en vertu de l'article 9(2) du règlement relatif aux taxes. ☐

41 gestrichen / deleted / supprimé

Zeichen des Anmelders /
Applicant's reference /
Référence du demandeur

42 **Automatischer Abbuchungsauftrag /**
Automatic debit order /
Ordre de prélèvement automatique
(nur möglich für Inhaber von beim EPA geführten laufenden Konten) /
(for EPO deposit account holders only) / (possibilité offerte uniquement aux titulaires de comptes courants ouverts auprès de l'OEB)

DECA

Das EPA wird hiermit beauftragt, fällig werdende Gebühren und Auslagen nach Maßgabe der Vorschriften über das automatische Abbuchungsverfahren vom nebenstehenden laufenden Konto abzubuchen. /
The EPO is hereby authorised, under the Arrangements for the automatic debiting procedure, to debit from the deposit account opposite any fees and costs falling due. /
Par la présente, il est demandé à l'OEB de prélever du compte courant ci-contre les taxes et frais venant à échéance, conformément à la réglementation relative à la procédure de prélèvement automatique.

Nummer des laufenden Kontos / Deposit account number / Numéro du compte courant

Name des Kontoinhabers / Account holder's name / Nom du titulaire du compte

43 Etwaige **Rückzahlungen** sollen auf das nebenstehende beim EPA geführte laufende Konto erfolgen. /
Any **refunds** should be made to the EPO deposit account opposite. /
Les **remboursements** éventuels doivent être effectués sur le compte courant ci-contre ouvert auprès de l'OEB.

DEPA

Nummer des laufenden Kontos / Deposit account number / Numéro du compte courant

Name des Kontoinhabers / Account holder's name / Nom du titulaire du compte

44 Die vorgeschriebene Liste über die diesem Antrag beigefügten Unterlagen ergibt sich aus der vorbereiteten Empfangsbescheinigung (Seite 8 dieses Antrags). /
The prescribed list of documents enclosed with this request is shown on the prepared receipt (page 8 of this request). /
La liste prescrite des documents joints à la présente requête figure sur le récépissé préétabli (page 8 de la présente requête).

☒

45 Für Angestellte nach Artikel 133 (3) Satz 1 mit allgemeiner Vollmacht /
For employees under Article 133(3), first sentence, having a general authorisation /
Pour les employés mentionnés à l'article 133(3), 1ère phrase, munis d'un pouvoir général

Nummer / Number / Numéro

46 **Unterschrift(en) des (der) Anmelder(s) oder Vertreter(s)**
Name des (der) Unterzeichneten bitte in Druckschrift wiederholen und bei juristischen Personen die Stellung des (der) Unterzeichneten innerhalb der Gesellschaft angeben. /
Signature(s) of applicant(s) or representative(s)
Under signature please print name and, in the case of legal persons, position within the company. /
Signature(s) du (des) demandeur(s) ou du (des) mandataire(s)
Prière d'indiquer en caractères d'imprimerie le ou les noms des signataires ainsi que, s'il s'agit d'une personne morale, la position occupée au sein de celle-ci par le ou les signataires.

Ort / Place / Lieu

Datum / Date

Unterschrift(en) / Signature(s)

Zeichen des Anmelders /
Applicant's reference /
Référence du demandeur

Europäisches Patentamt
European Patent Office
Office européen des brevets

Empfangsbescheinigung
Receipt for documents
Récépissé de documents

Liste der diesem Antrag beigefügten Unterlagen – Hiermit wird der Empfang der unten bezeichneten Dokumente bescheinigt. Wird im Falle der Einreichung der europäischen Patentanmeldung bei einer nationalen Behörde diese Empfangsbescheinigung vom Europäischen Patentamt übersandt, so ist sie als Mitteilung gemäß Regel 35 (4) anzusehen (siehe Feld RENA).

Checklist of enclosed documents – Receipt of the documents indicated below is hereby acknowledged. If this receipt is issued by the European Patent Office and the European patent application was filed with a national authority, it serves as a communication under Rule 35(4) (see Section RENA).

Liste des documents annexés à la présente requête – Nous attestons le dépôt des documents désignés ci-dessous. Si, en cas de dépôt de la demande de brevet européen auprès d'un service national, l'Office européen des brevets délivre le présent récépissé de documents, ce récépissé est réputé être la notification visée à la règle 35(4) (cf. rubrique RENA).

Nur für amtlichen Gebrauch / For official use only / Cadre réservé à l'administration

Amtsstempel / Official stamp / Cachet officiel

Tag des Eingangs (Regel 35 (2)) / Date of receipt (Rule 35(2)) / Date de réception (règle 35(2)) DREC	
Anmeldenummer für den Schriftverkehr mit dem EPA; *Aktenzeichen für Prioritätserklärungen* / Application No. to be used in correspondence with the EPO; *file No. to be used for priority declarations* / N° de la demande à utiliser dans la correspondance avec l'OEB; *n° de dépôt à utiliser pour la déclaration de priorité*	
Tag des Eingangs beim EPA (Regel 35 (4)) / Date of receipt at EPO (Rule 35(4)) / Date de réception à l'OEB (règle 35(4)) RENA	

47 **A. Anmeldungsunterlagen und Prioritätsbeleg(e) / Application and priority documents / Pièces de la demande et document(s) de priorité**

Blattzahl / Number of sheets* / Nombre de feuilles**

1. ☐ Beschreibung (ohne Sequenzprotokollteil) / Description (excluding sequence listing part) / Description (sauf partie réservée au listage des séquences)
2. ☐ Patentansprüche / Claims / Revendications
3. ☐ Zeichnung(en) / Drawing(s) / Dessin(s)
4. ☐ Sequenzprotokollteil der Beschreibung / Sequence listing part of description / Partie de la description réservée au listage des séquences
5. ☐ Zusammenfassung / Abstract / Abrégé
6. ☐ Früher eingereichte Anmeldung / Previously filed application / Demande déposée antérieurement
7. ☐ Übersetzung der Anmeldungsunterlagen / Translation of the application documents / Traduction des pièces de la demande
8. ☐ Übersetzung der früher eingereichten Anmeldung / Translation of the previously filed application / Traduction de la demande déposée antérieurement
9. ☐ Prioritätsbeleg(e) / Priority document(s) / Document(s) de priorité
10. ☐ Übersetzung des (der) Prioritätsbelegs(belege) / Translation of priority document(s) / Traduction du (des) document(s) de priorité

Gesamtzahl der Abbildungen / Total number of figures* / Nombre total de figures**

* Die Richtigkeit der Blattzahl und der Gesamtzahl der Abbildungen wurde bei Eingang nicht geprüft. / * No check was made on receipt that the number of sheets and the total number of figures indicated were correct. / * L'exactitude du nombre de feuilles et du nombre total de figures n'a pas été contrôlée lors du dépôt.

*Anzahl / Number / Nombre**

AREF

Zeichen des Anmelders / Applicant's reference / Référence du demandeur

48 **B. Der Anmeldung in der eingereichten Fassung liegen folgende Unterlagen bei: / This application as filed is accompanied by the items below: / Les pièces ci-après sont annexées à la présente demande :**

1. ☐ Vollmacht / Authorisation / Pouvoir
2. ☐ Allgemeine Vollmacht / General authorisation / Pouvoir général
3. ☐ Erfindernennung / Designation of inventor / Désignation de l'inventeur
4. ☐ Recherchenergebnisse nach Regel 141 (1) / Search results under Rule 141(1) / Résultats de la recherche conformément à la règle 141(1)
5. ☐ Gebührenzahlungsvordruck (EPA Form 1010) / Voucher for the settlement of fees (EPO Form 1010) / Bordereau de règlement de taxes (OEB Form 1010)
6. ☐ Elektronischer Datenträger für Sequenzprotokoll / Electronic data carrier for sequence listing / Support électronique de données pour listage des séquences
7. ☐ Zusatzblatt / Additional sheet / Feuille supplémentaire
8. ☐ Sonstige Unterlagen (bitte hier spezifizieren) / Other documents (please specify here) / Autres documents (veuillez préciser)

49 **C. Exemplare dieser Empfangsbescheinigung** (bitte zutreffende Zahl ankreuzen) / **Copies of this receipt for documents** (please mark appropriate number with a cross) / **Exemplaires du présent récépissé de documents** (veuillez cocher le chiffre correspondant)

☐ 3 Einreichung direkt beim EPA / Direct filing with the EPO / Dépôt direct auprès de l'OEB

☐ 4 Einreichung bei einer nationalen Behörde / Filing with a national authority / Dépôt auprès d'un service national

EPA/EPO/OEB 1001.8 01.12

Designation of the Inventor in Europe

-From www.epo.org

http://www.epo.org/applying/forms-fees/forms.html

Europäisches Patentamt
European Patent Office
Office européen des brevets

Erfindernennung
Designation of inventor
Désignation de l'inventeur

(falls Anmelder nicht oder nicht allein der Erfinder ist) /
(where the applicant is not the inventor or is not the sole inventor) /
(si le demandeur n'est pas l'inventeur ou l'unique inventeur)

Zeichen des Anmelders / Applicant's reference /
Référence du demandeur
(max. 15 Positionen / max. 15 spaces / 15 caractères au maximum)

Anmeldenummer oder, falls noch nicht bekannt, Bezeichnung der Erfindung: /
Application No. or, if not yet known, title of the invention: /
N° de la demande ou, s'il n'est pas encore connu, titre de l'invention :

In Sachen der oben bezeichneten europäischen Patentanmeldung nennt (nennen) der (die) Unterzeichnete(n)[1] / In respect of the above European patent application I (we), the undersigned[1] / En ce qui concerne la demande de brevet européen susmentionnée, le(s) soussigné(s)[1]

als Erfinder[2]: / do hereby designate as inventor(s)[2]: / désigne(nt) en tant qu'inventeur(s)[2] :

☐ Weitere Erfinder sind auf einem gesonderten Blatt angegeben. / Additional inventors are indicated on a supplementary sheet. / D'autres inventeurs sont mentionnés sur une feuille supplémentaire.

Der (Die) Anmelder hat (haben) das Recht auf das europäische Patent erlangt[3] / The applicant(s) has (have) acquired the right to the European patent[3] / Le(s) demandeur(s) a (ont) acquis le droit au brevet européen[3]

☐ gemäß Vertrag vom / by an agreement dated / en vertu du contrat passé le

☐ als Arbeitgeber / as employer(s) / en qualité d'employeur(s)

☐ durch Erbfolge / as successor(s) in title / par succession

Ort / Place / Lieu

Datum / Date

Unterschrift(en) des (der) Anmelder(s) oder Vertreter(s): /
Signature(s) of applicant(s) or representative(s): /
Signature(s) du (des) demandeur(s) ou du (des) mandataire(s) :

Name des (der) Unterzeichneten bitte in Druckschrift wiederholen. Bei juristischen Personen bitte die Stellung des (der) Unterzeichneten innerhalb der Gesellschaft in Druckschrift angeben. / Please print name(s) under signature(s). In the case of legal persons, the position of the signatory within the company should also be printed. / Le ou les noms des signataires doivent être indiqués en caractères d'imprimerie. S'il s'agit d'une personne morale, la position occupée au sein de celle-ci par le ou les signataires doit également être indiquée en caractères d'imprimerie.

IV.Fees to grant a patent in Europe

–From www.epo.org

http://www.epoline.org/portal/portal/default/epoline.Scheduleoffees

Europäisches Patentamt
European Patent Office
Office européen des brevets

Online Fee Payment - **Schedule of Fees**

Search criteria

Fee group:	ALL FEES
Code:	
Description:	
Valid at:	08.05.2013
Currency:	EUR

Code	Description	Amount EUR
001	Filing fee - EP direct - not online	200,00 +
001	Filing fee - EP direct - online	115,00 +
002	Fee for a European search - Applications filed on/after 01.07.2005	1.165,00 +
002	Fee for a European search - Supplementary search for applications filed before 01.07.2005	840,00 +
003	Fee for an international search	1.875,00 +
004	Fee for an international-type search - first filings	1.145,00 +
004	Fee for an international-type search - all other cases	1.795,00 +
005	Designation fee - For each State designated (max. 7x) for applications filed before 01.04.2009	95,00 +
005	Designation fee - For all contracting States designated for applications filed on/after 01.04.2009	555,00 +
006	Examination fee - For applications filed before 01.07.2005 and for international applications filed on/after 01.07.2005 without supplementary Europ	1.730,00 +
006	Examination fee - For applications filed on/after 01.07.2005	1.555,00 +
007	Fee for grant and printing (not more than 35 pages) or fee for grant including fee for publication	875,00 +
008	Additional printing fee for 36th and each subsequent page	14,00 +
009	Fee for publishing a new specification of the European patent	70,00 +
010	Opposition fee	745,00 +
011	Fee for appeal	1.240,00 +
013	Fee for re-establishment, reinstatement, restoration (EPC, PCT)	610,00 +
014	Conversion fee	70,00 +
015	Claims fee - For the 16th to the 50th claim	225,00 +
015	Claims fee - For the 51st and each subsequent claim	555,00 +
016	Claims fee in accordance with R. 71(4) - For the 16th to the 50th claim	225,00 +
016	Claims fee in accordance with R. 71(4) - For the 51st and each subsequent claim	555,00 +
017	Fee for the request of a decision on the fixing of costs by the opposition division (Rule 88(3) EPC)	70,00 +
018	Fee for the conservation of evidence	70,00 +
019	Transmittal fee for an international application	125,00 +
020	Filing fee - entry EP-phase - not online	200,00 +
020	Filing fee - entry EP-phase - online	115,00 +
021	Fee for preliminary examination of int. application	1.850,00 +
022	Registering of transfer	95,00 +
023	Registering of licences and other rights	95,00 +
024	Cancellation of entry licences and other rights	95,00 +
025	Certified copy of patent certificate	50,00 +
026	Extract from the Europ. Patent Register	40,00 +
027	Inspection of files (paper copies max. 100 pgs, electr. storage medium)	50,00 +

028	Maximum amount administrative fee deposit account	765,00 +
029	Certified copy of application; priority document	50,00 +
030	Communication of information from an application	40,00 +
031	Issue of receipts by fax	55,00 +
033	Renewal fee for the 3rd year	445,00 +
034	Renewal fee for the 4th year	555,00 +
035	Renewal fee for the 5th year	775,00 +
036	Renewal fee for the 6th year	995,00 +
037	Renewal fee for the 7th year	1.105,00 +
038	Renewal fee for the 8th year	1.215,00 +
039	Renewal fee for the 9th year	1.325,00 +
040	Renewal fee for the 10th year (constant from 10th year on)	1.495,00 +
041	Renewal fee for the 11th year	1.495,00 +
042	Renewal fee for the 12th year	1.495,00 +
043	Renewal fee for the 13th year	1.495,00 +
044	Renewal fee for the 14th year	1.495,00 +
045	Renewal fee for the 15th year	1.495,00 +
046	Renewal fee for the 16th year	1.495,00 +
047	Renewal fee for the 17th year	1.495,00 +
048	Renewal fee for the 18th year	1.495,00 +
049	Renewal fee for the 19th year	1.495,00 +
050	Renewal fee for the 20th year	1.495,00 +
055	Add. copy of docs cited in search report	40,00 +
056	Surcharge fee for printing (R. 82(3), R. 95(3))	115,00 +
059	Additional charge per page for transmission by fax - in Europe	4,50 +
059	Additional charge per page for transmission by fax - outside Europe	6,00 +
060	Fee for a technical opinion	3.695,00 +
061	Max. surcharge under Art. 7(3) RFees	150,00 +
062	Protest fee - for international applications	830,00 +
063	Late payment fee (R. 16bis.2 PCT), maximum amount	550,00 +
064	Late payment fee (R. 58bis.2 PCT)	330,00 +
066	Fee for late furnishing of sequence listings (R. 13ter.1, 13ter.2 PCT)	220,00 +
067	Fee for late furnishing of sequence listing (R. 30(3) EPC)	220,00 +
069	Review fee for a supplementary international search - Review fee for a supplementary international search	830,00 +
080	Certification of other documents	50,00 +
093	Add. fee for renewal fee 3rd year	222,50 +
094	Add. fee for renewal fee 4th year	277,50 +
095	Add. fee for renewal fee 5th year	387,50 +
096	Add. fee for renewal fee 6th year	497,50 +
097	Add. fee for renewal fee 7th year	552,50 +
098	Add. fee for renewal fee 8th year	607,50 +
099	Add. fee for renewal fee 9th year	662,50 +
100	Add. fee for renewal fee 10th year	747,50 +
101	Add. fee for renewal fee 11th year	747,50 +
102	Add. fee for renewal fee 12th year	747,50 +
103	Add. fee for renewal fee 13th year	747,50 +
104	Add. fee for renewal fee 14th year	747,50 +
105	Add. fee for renewal fee 15th year	747,50 +
106	Add. fee for renewal fee 16th year	747,50 +
107	Add. fee for renewal fee 17th year	747,50 +
108	Add. fee for renewal fee 18th year	747,50 +
109	Add. fee for renewal fee 19th year	747,50 +
110	Add. fee for renewal fee 20th year	747,50 +
111	Fee for petition for review	2.760,00 +

121	Fee for further processing (late performance of acts R. 71(3))	240,00 +
122	Fee for further processing (non fee related cases)	240,00 +
123	Fee for further processing (late payment of a fee - 50%)	0,00 +
131	Limitation fee	1.105,00 +
141	Revocation fee	500,00 +
222	PCT charge per sheet in excess of 30	12,00 +
224	Handling fee	165,00 +
225	International filing fee	1.100,00 +
318	PCT - PDF reduction	165,00 -
319	PCT - XML reduction	248,00 -
400	Surcharge for extension fees	51,00 +
401	Extension fee for Slovenia (SI) (EPC Contracting State as from 1.12.2002)	102,00 +
402	Extension fee for Lithuania (LT) (EPC Contracting State as from 1.12.2004)	102,00 +
403	Extension fee for Latvia (LV) (EPC Contracting State as from 1.7.2005)	102,00 +
404	Extension fee for Albania (AL) (EPC Contracting State as from 1.5.2010)	102,00 +
405	Extension fee for Romania (RO) (EPC Contracting State as from 1.3.2003)	102,00 +
406	Extension fee for former Yugoslav Republic of Macedonia (MK) (EPC Contracting State as from 1.1.2009)	102,00 +
407	Extension fee for Croatia (HR) (EPC Contracting State as from 1. 1. 2008)	102,00 +
408	Extension fee for Bosnia and Herzegovina (BA) - Extension fee for Bosnia and Herzegovina	102,00 +
409	Extension fee for Serbia (RS) (filing date as of 04.06.2006-30.09.2010)	102,00 +
410	Extension fee for Montenegro (ME)	102,00 +
501	Additional filing fee for the 36th and each subsequent page	14,00 +
520	Additional filing fee for the 36th and each subsequent page - entry into EP phase	14,00 +

V.Contact the United States Patent and Trademark Office

-from www.uspto.gov

http://www.uspto.gov/patents/contact_patents.jsp

USPTO MADISON BUILDING
600 Dulany Street
Alexandria, VA 22314

PUBLIC SEARCH FACILITY
Madison East - 1st Floor

SCIENTIFIC AND TECHNICAL INFORMATION CENTER (STIC)
Remsen Building - Room 1D58
400 Dulany Street
(571) 272-3547 (main branch)
(571) 272-2520 (biotech-chem library)

Direct questions regarding regulations or procedures to the Office of the Deputy Commissioner for Patent Examination Policy.

Telephone: 571-272-8800 Fax: 571-273-0125

Direct questions regarding legislative changes to the Office of Policy and External Affairs.

Telephone: 571-272-9300 Fax: 571-273-0085

The Inventors Assistance Center (IAC) Send e-mail to: IndependentInventor@uspto.gov.
See alsohttp://www.uspto.gov/inventors/iac/index.jsp.
Provisional application mailing address:

COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

Contact Patents

Office	Toll-free Number	Local Number
USPTO Customer Support Centers -- For general patent information, Inventors Assistance Center, mailing addresses, Internet addresses, and contact information for other USPTO services.	**1-800-786-9199**	**571-272-1000** **571-272-9950 (TTY)**
Central Fax -- For transmitting by facsimile patent related correspondence. Please see 37 CFR 1.6(d) for an identification of correspondence that the USPTO does not permit to be transmitted by facsimile.		**571-273-8300 (FAX)**
Electronic Business Center -- Customer support for electronic filing and PAIR access. Customer Numbers and digital (PKI) certificate issuance and maintenance	**1-866-217-9197**	**571-272-4100**
Office of the Commissioner for Patents -- Responsible for all patent-examining functions in the Technology Centers and all operational aspects of patent application processing		**571-272-8800**
Office of Data Management -- Status inquires regarding newly filed and allowed patent applications; and questions about Pre-Grant Publication or 18-month Publication	**1-888-786-0101**	**571-272-4200**
Office of Patent Classification -- Maintains the U.S. Patent Classification system		**571-272-7850**

Office of Patent Cooperation Treaty Legal Administration (PCT Help Desk) -- Assistance with applications filed under the Patent Cooperation Treaty		**571-272-4300**
Office of Patent Legal Administration -- Rule changes, PG Pubs, Patent Term Adjustment & Extension		**571-272-7701**
Office of Petitions -- Reviews and decides petitions, requests, and related inquiries, regarding the filing of patent applications		**571-272-3282**
Ombudsman Program -- When there is a breakdown in the normal application process, including before and after prosecution, the Patents Ombudsman Program can assist in getting the application back on track		**Use contact form found on the Ombudsman page**
Scientific and Technical Information Center --Extensive collections of foreign patents, Non-Patent literature and intellectual property law. Open to the public.		**571-272-3547**
Public Search Facility -- Provides public access to patent and trademark information in a variety of formats including on-line, microfilm, and print. Trained staff are available to assist public users.		**571-272-3275**

Computer Architecture, Software, & Information Security

Title	Telephone	Fax
eneral Information/Receptionist	571-272-2100	571-273-8300
Management Roster		
Customer Service Representative	571-272-2100	571-273-8300
RightFax		
Before Final		571-273-8300
After Final	571-273-8300	571-273-8300
Customer Service	571-273-8300	571-273-8300

Communications

Title	Telephone	Fax
Receptionist	571-272-2600	571-273-8300
Management Roster		
Customer Service	571-272-	571-273-

	2600	8300
RightFax		
Before Final		571-273-8300
After Final		571-273-8300
Customer Service		571-273-8300

Digital Communications, General Communications, Optical Communications, Telephony, Audio, Multiplex Communications, Cellular Telephony, Radio and Satellite Communications

Title	Telephone	Fax
Director (2611,2612, 2613, 2624,2627)	571-272-4650	571-273-8300
Director (2618, 2626,2628,2629)	571-272-4550	571-273-8300
Director (2614, 2617,2622,2625)	571-272-4750	571-273-8300
2611-Digital Communications	571-272-4550	
2612-General Communications	571-272-4550	

2613-Optical Communications	571-272-4550	
2614-Telephony	571-272-4650	
2617-Cellular Telephony	571-272-4750	
2618-Radio and Satellite Communications	571-272-4650	

Television and TV Recording, Video Distribution, Image Analysis, (Fax, Printing, Printing Network, Scanners), Speech, (Fax, Disk Drive), Computer Graphics, Display Systems

Title	Telephone	Fax
Director and All Art Units	571-272-2600	571-273-8300
2621-Television and TV Recording	571-272-4750	
2622-Television and TV Recording	571-272-4750	
2624-Image Analysis	571-272-4550	
2625-Fax, Printing, Printing Network, Scanners	571-272-4750	
2626-Speech	571-272-	

	4650	
2627-Fax, Disk Drive	571-272-4550	
2628-Computer Graphics	571-272-4650	
2629-Display Systems	571-272-4650	

Semiconductors, Electrical and Optical Systems and Components

Title	**Telephone**	**Fax**
General Information/Receptionist	571-272-2800	571-273-8300
Management Roster		
Customer Service	571-272-2800	571-273-8300
RightFax		
Before Final		571-273-8300
After Final		571-273-8300
Customer Service		571-273-8300
Title	**Telephone**	**Fax**

General Information/Receptionist	571-272-8004	571-273-8300
Director and All Art Units	571-272-8004	571-273-8300
2811 - Semiconductors	571-272-1670	
2812 - Semiconductors	571-272-2194	
2813 - Semiconductors	571-272-1731	
2814 - Semiconductors/Manufacturing	571-272-1705	
2815 - Semiconductors	571-272-2298	
2818 - Semiconductors	571-272-1657	
2822 - Semiconductors/Manufacturing	571-272-2429	
2823 - Semiconductors/Manufacturing	571-272-9820	
2824 - Static Memory/Semiconductors	571-272-1869	
2825 - Semiconductors/Manufacturing	571-272-7483	
2826 - Semiconductors	571-272-	

	1945	
2827 - Static Information Storage and Retrieval	571-272-1852	
2828 -Static Information Storage and Retrieval	571-272-2339	
2829 - Semiconductors/Manufacturing & Measuring	571-272-1678	
2891 - Semiconductors/Manufacturing	571-272-2761	
2892 - Semiconductors/Manufacturing	571-272-1708	
2893 - Semiconductors/Manufacturing	571-272-1664	
2894 - Semiconductors/Manufacturing	571-272-2402	
2895 - Semiconductors/Manufacturing	571-272-1736	
2896 - Semiconductors/Manufacturing	571-272-8895	
2897 - Semiconductors/Manufacturing	571-272-1867	
2898 - Semiconductors/Manufacturing	571-272-1864	

Circuits/ Measuring Testing

Title	Telephone	Fax
General Information/Receptionist	571-272-1850	571-273-8300
Director and All Art Units	571-272-1850	571-273-8300
2816 - Electronic Circuits	571-272-1988	
2817 - Electronic Components	571-272-1769	
2819 - Digital Logic	571-272-3985	
2821 - Electronic Circuits	571-272-1662	
	571-272-2367	
2832 - Electrical Elements	571-272-1990	
2833 - Electrical Connectors	571-272-2238	
	571-272-2009	
	571-272-2098	

2834 - Motor Structure, Generators	571-272-8188	
2835 - Electrical Housing/Cooling	571-272-3740	
	571-272-1977	
	571-272-2342	
2836 - Control Circuits	571-272-2391	
	571-272-7492	
2837 - Components	571-272-2227	
2838 - Power Supplies	571-272-1838	
	571-272-2229	
2856 - Measuring & Testing	571-272-2208	
	571-272-2388	
	571-272-2375	
2857 - Measuring & Testing	571-272-	

	2302	
	571-272-7925	
	571-272-2255	
2858 - Measuring & Testing	571-272-2210	
	571-272-7924	
	571-272-2121	
2859 - Battery/Capacitor Charging/Discharging	571-272-2312	

VI.Fees to grant a patent in the United States

-From www.uspto.org

http://www.uspto.gov/web/offices/ac/qs/ope/fee031913.htm

Patent Application Filing Fees
Patent Search Fees
Patent Examination Fees
Patent Post-Allowance Fees
Patent Extension of Time Fees
Patent Maintenance Fees
Miscellaneous Patent Fees
Post Issuance Fees
Patent Trial and Appeal Fees
Patent Petition Fees
Patent Service Fees
Patent Enrollment Fees

PCT Fees - National Stage
PCT Fees - International Stage
PCT Fees to Foreign Offices

General
Finance Service Fees
Computer Service Fees

Trademark Processing Fees
Trademark Madrid Protocol Fees
Trademark International Application Fees
Trademark Service Fees
Fastener Quality Act Fees

Fee Code	37 CFR	Description	Fee	Small Entity Fee (if applicable)	Micro Entity Fee (if applicable)
Patent Application Filing Fees					
1011/2011/3011	1.16(a)	Basic filing fee - Utility	280.00	140.00	70.00
4011†	1.16(a)	Basic filing fee - Utility (electronic filing for small entities)	n/a	70.00	n/a
1012/2012/3012	1.16(b)	Basic filing fee - Design	180.00	90.00	45.00
1017/2017/3017	1.16(b)	Basic filing fee - Design (CPA)	180.00	90.00	45.00
1013/2013/3013	1.16(c)	Basic filing fee - Plant	180.00	90.00	45.00
1005/2005/3005	1.16(d)	Provisional application filing fee	260.00	130.00	65.00
1014/2014/3014	1.16(e)	Basic filing fee - Reissue	280.00	140.00	70.00
1019/2019/3019	1.16(e)	Basic filing fee - Reissue (CPA)	280.00	140.00	70.00
1051/2051/3051	1.16(f)	Surcharge - Late filing fee, search fee, examination fee or oath or declaration	140.00	70.00	35.00
1052/2052/3052	1.16(g)	Surcharge - Late provisional filing fee or cover sheet	60.00	30.00	15.00
1201/2201/3201	1.16(h)	Independent claims in excess of three	420.00	210.00	105.00
1204/2204/3204	1.16(h)	Reissue independent claims in excess of three	420.00	210.00	105.00
1202/2202/3202	1.16(i)	Claims in excess of 20	80.00	40.00	20.00
1205/2205/3205	1.16(i)	Reissue claims in excess of 20	80.00	40.00	20.00
1203/2203/3203	1.16(j)	Multiple dependent claim	780.00	390.00	195.00
1081/2081/3081	1.16(s)	Utility Application Size Fee - for each additional 50 sheets that exceeds 100 sheets	400.00	200.00	100.00
1082/2082/3082	1.16(s)	Design Application Size Fee - for each additional 50 sheets that exceeds 100 sheets	400.00	200.00	100.00
1083/2083/3083	1.16(s)	Plant Application Size Fee - for each additional 50 sheets that exceeds 100 sheets	400.00	200.00	100.00
1084/2084/3084	1.16(s)	Reissue Application Size Fee - for each additional 50 sheets that exceeds 100 sheets	400.00	200.00	100.00
1085/2085/3085	1.16(s)	Provisional Application Size Fee - for each additional 50 sheets that exceeds 100 sheets	400.00	200.00	100.00
1090/2090	1.16(t)	Non-electronic filing fee — Utility (additional fee for applications filed in paper)	400.00	200.00	200.00
1053/2053/3053	1.17(i)(1)	Processing fee, except in provisional applications	140.00	70.00	35.00

† The 4000 series fee code may be used via EFS-Web

Patent Search Fees Back to Top

Patent Search Fees					Back to Top
1111/2111/3111	1.16(k)	Utility Search Fee	600.00	300.00	150.00
1112/2112/3112	1.16(l)	Design Search Fee	120.00	60.00	30.00
1113/2113/3113	1.16(m)	Plant Search Fee	380.00	190.00	95.00
1114/2114/3114	1.16(n)	Reissue Search Fee	600.00	300.00	150.00
Patent Examination Fees					Back to Top
1311/2311/3311	1.16(o)	Utility Examination Fee	720.00	360.00	180.00
1312/2312/3312	1.16(p)	Design Examination Fee	460.00	230.00	115.00
1313/2313/3313	1.16(q)	Plant Examination Fee	580.00	290.00	145.00
1314/2314/3314	1.16(r)	Reissue Examination Fee	2,160.00	1,080.00	540.00
Patent Post-Allowance Fees					Back to Top
1501/2501/3501	1.18(a)(2)	Utility issue fee	1,780.00	890.00	445.00
1511/2511/3511	1.18(a)(2)	Reissue issue fee	1,780.00	890.00	445.00
1502/2502/3502	1.18(b)(2)	Design issue fee	1,020.00	510.00	255.00
1503/2503/3503	1.18(c)(2)	Plant issue fee	1,400.00	700.00	350.00
1504	1.18(d)(2)	Publication fee for early, voluntary, or normal publication	300.00		
1505	1.18(d)(3)	Publication fee for republication	300.00		
Patent Extension of Time Fees					Back to Top
1251/2251/3251	1.17(a)(1)	Extension for response within first month	200.00	100.00	50.00
1252/2252/3252	1.17(a)(2)	Extension for response within second month	600.00	300.00	150.00
1253/2253/3253	1.17(a)(3)	Extension for response within third month	1,400.00	700.00	350.00
1254/2254/3254	1.17(a)(4)	Extension for response within fourth month	2,200.00	1,100.00	550.00
1255/2255/3255	1.17(a)(5)	Extension for response within fifth month	3,000.00	1,500.00	750.00
Patent Maintenance Fees					Back to Top
1551/2551/3551	1.20(e)	Due at 3.5 years	1,600.00	800.00	400.00
1552/2552/3552	1.20(f)	Due at 7.5 years	3,600.00	1,800.00	900.00
1553/2553/3553	1.20(g)	Due at 11.5 years	7,400.00	3,700.00	1,850.00
1554/2554/3554	1.20(h)	Surcharge - 3.5 year - Late payment within 6 months	160.00	80.00	40.00
1555/2555/3555	1.20(h)	Surcharge - 7.5 year - Late payment within 6 months	160.00	80.00	40.00
1556/2556/3556	1.20(h)	Surcharge - 11.5 year - Late payment within 6 months	160.00	80.00	40.00
1557/2557/3557	1.20(i)(1)	Surcharge after expiration - Late payment is unavoidable	700.00	350.00	175.00
1558/2558/3558	1.20(i)(2)	Surcharge after expiration - Late payment is unintentional	1,640.00	820.00	410.00

1810/2810/2910	1.17(i)	For each additional invention to be examined (see 37 CFR 1.129(b))	840.00	420.00	210.00
Post Issuance Fees					Back to Top
1811	1.20(a)	Certificate of correction	100.00		
1816	1.20(b)	Processing fee for correcting inventorship in a patent	130.00		
1812/2812/3812	1.20(c)(1)	Request for ex parte reexamination	12,000.00	6,000.00	3,000.00
1821/2821/3821	1.20(c)(3)	Reexamination independent claims in excess of three and also in excess of the number of such claims in the patent under reexamination	420.00	210.00	105.00
1822/2822/3822	1.20(c)(4)	Reexamination claims in excess of 20 and also in excess of the number of claims in the patent under reexamination	80.00	40.00	20.00
1814	1.20(d)	Statutory disclaimer, including terminal disclaimer	160.00		
1825/2825/3825	1.20(k)(1)	Request for supplemental examination	4,400.00	2,200.00	1,100.00
1827/2827/3827	1.20(k)(2)	Reexamination ordered as a result of supplemental examination	12,100.00	6,050.00	3,025.00
1828/2828/3828	1.20(k)(3)(i)	Supplemental Examination Document Size Fee - for nonpatent document having between 21 and 50 sheets	180.00	90.00	45.00
1829/2829/3829	1.20(k)(3)(ii)	Supplemental Examination Document Size Fee - for each additional 50 sheets or a fraction thereof in a nonpatent document	280.00	140.00	70.00
* Third-party filers are not eligible for the micro entity fee.					
Patent Trial and Appeal Fees					Back to Top
1405	41.20(a)	Petitions to the Chief Administrative Patent Judge under 37 CFR 41.3	400.00		
1401/2401/3401	41.20(b)(1)	Notice of appeal	800.00	400.00	200.00
n/a	41.20(b)(2)(i)	Filing a brief in support of an appeal	0.00	0.00	0.00
1404/2404/3404	41.20(b)(2)(ii)	Filing a brief in support of an appeal in an inter partes reexamination proceeding	2,000.00	1,000.00	500.00
1403/2403/3403	41.20(b)(3)	Request for oral hearing	1,300.00	650.00	325.00
1413/2413/3413	41.20(b)(4)	Forwarding an appeal in an application or ex parte reexamination proceeding to the Board	2,000.00	1,000.00	500.00
1406	42.15(a)(1)	Inter partes review request fee - Up to 20 claims	9,000.00		
1414	42.15(a)(2)	Inter partes review post-institution fee - Up to 15 claims	14,000.00		
1407	42.15(a)(3)	Inter partes review request of each claim in excess of 20	200.00		
1415	42.15(a)(4)	Inter partes post-institution request of each claim in excess of 15	400.00		
1408	42.15(b)(1)	Post-grant or covered business method review request fee - Up to 20 claims	12,000.00		
1416	42.15(b)(2)	Post-grant or covered business method review post-institution fee - Up to 15 claims	18,000.00		
1409	42.15(b)(3)	Post-grant or covered business method review request of each claim in excess of 20	250.00		
1417	42.15(b)(4)	Post-grant or covered business method review post-institution request of each claim in excess of 15	550.00		
1412	42.15(c)(1)	Petition for a derivation proceeding	400.00		
1411	42.15(d)	Request to make a settlement agreement available and other requests filed in a patent trial proceeding	400.00		
* Third-party filers are not eligible for the micro entity fee.					

VII.Application to grant a patent in the United States

-From www.uspto.gov

http://www.uspto.gov/forms/forms.jsp

PTO/AIA/14 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention		

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 — Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	State/Province	Country of Residence

Mailing Address of Inventor:

Address 1	
Address 2	
City	State/Province
Postal Code	Country

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number		
Email Address		Add Email / Remove Email

Application Information:

Title of the Invention			
Attorney Docket Number		Small Entity Status Claimed	☐
Application Type			
Subject Matter			
Total Number of Drawing Sheets (if any)		Suggested Figure for Publication (if any)	

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention		

Publication Information:

☐	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐	**Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number			

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention		

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

Authorization to Permit Access:

☐ Authorization to Permit Access to the Instant Application by the Participating Offices

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date o f filing this Authorization.

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention		

Applicant 1 Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.	Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor :

If the Applicant is an Organization check here.

Prefix	Given Name	Middle Name	Family Name	Suffix

Mailing Address Information For Applicant:

Address 1			
Address 2			
City		**State/Province**	
Country		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

Non-Applicant Assignee Information:

Providing assignment information in this section does not subsitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Assignee 1

Complete this section only if non-applicant assignee information is desired to be included on the patent application publication in accordance with 37 CFR 1.215(b). Do not include in this section an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest), as the patent application publication will include the name of the applicant(s).

Remove

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	
	Application Number	
Title of Invention		

If the Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

Remove

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Signature			Date (YYYY-MM-DD)	
First Name		Last Name	Registration Number	

Additional Signature may be generated within this form by selecting the Add button. Add

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

VIII. Declaration for utility or design patent application in the United States

-From www.uspto.gov

http://www.uspto.gov/forms/forms.jsp

Doc Code: Oath
Document Description: Oath or declaration filed

PTO/SB/01 (09-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☐ Declaration Submitted With Initial Filing OR ☐ Declaration Submitted After Initial Filing (surcharge (37 CFR 1.16(f)) required)

Attorney Docket Number	
First Named Inventor	
COMPLETE IF KNOWN	
Application Number	
Filing Date	
Art Unit	
Examiner Name	

I hereby declare that: (1) Each inventor's residence, mailing address, and citizenship are as stated below next to their name; and (2) I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention titled:

(Title of the Invention)

the application of which was made or was authorized to be made by me and

☐ is attached hereto

OR

☐ was filed on (MM/DD/YYYY) _____ as United States Application Number or PCT International Application Number _____ and was amended on (MM/DD/YYYY) _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

Authorization To Permit Access To Application by Participating Offices

☐ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

PTO/SB/01 (09-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

DECLARATION — Utility or Design Patent Application

Claim of Foreign Priority Benefits

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES	NO
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application number(s) are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

PTO/SB/01 (09-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

DECLARATION — Utility or Design Patent Application

Direct all correspondence to: ☐	The address associated with Customer Number:		OR	☐	Correspondence address below

Name			
Address			
City	State	Zip	
Country	Telephone	Email	

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

NAME OF SOLE OR FIRST INVENTOR:		☐ A petition has been filed for this unsigned inventor	
Given Name (first and middle [if any])		Family Name or Surname	
Inventor's Signature		Date	
Residence: City	State	Country	Citizenship
Mailing Address			
City	State	Zip	Country

☐ Additional inventors or a legal representative are being named on the _____ supplemental sheet(s) PTO/SB/02A or 02LR attached hereto

IX.For oral examination in the United States

-From www.uspto.gov

http://www.uspto.gov/forms/forms.jsp

PTO/AIA/32 (03-13)
Approved for use through 03/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

REQUEST FOR ORAL HEARING BEFORE THE PATENT TRIAL AND APPEAL BOARD

Docket Number (Optional)

I hereby certify that this correspondence is being facsimile transmitted to the USPTO, EFS-Web transmitted to the USPTO, or deposited with the United States Postal Service with sufficient postage in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]

on _____.

Signature _____

Typed or printed name _____

In re Application of

Application Number	Filed
For	
Art Unit	Examiner

Applicant hereby **requests an oral hearing** before the Patent Trial and Appeal Board in the appeal of the above-identified application.

The fee for this Request for Oral Hearing is (37 CFR 41.20(b)(3)) $ _____

☐ Applicant asserts small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by 50%, and the resulting fee is: $ _____

☐ Applicant certifies micro entity status. See 37 CFR 1.29. Therefore, the fee shown above is reduced by 75%, and the resulting fee is: $ _____
Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. _____.

☐ Payment made via EFS-Web.

☐ A petition for an extension of time under 37 CFR 1.136(b) (PTO/SB/23 or equivalent) is enclosed.
For extensions of time in reexamination proceedings, see 37 CFR 1.550.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant ☐ attorney or agent of record Registration number _____ ☐ attorney or agent acting under 37 CFR 1.34 Registration number _____

Signature _____

Typed or printed name _____

Telephone Number _____

Date _____

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.

☐ * Total of _____ forms are submitted.

This collection of information is required by 37 CFR 41.20(b)(3). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

X.For Representatives in the United States

-From www.uspto.gov

http://www.uspto.gov/forms/forms.jsp

PTO/SB/02LR (07-07)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

DECLARATION Supplemental Sheet
For Legal Representatives (35 U.S.C. 117) On Behalf of A Deceased or Incapacitated Inventor

Enter Deceased or Incapacitated Inventor's Name _____ **Page**_____ **of** _____

Name of Legal Representative:	☐ A petition has been filed for this non-signing legal representative		
Given Name (first and middle (if any))	Family Name or Surname		
Legal Representative's Signature			Date
Residence: City	State	Country	Citizenship
Mailing Address			
Mailing Address			
City	State	Zip	Country

Name of Additional Legal Representative, if any:	☐ A petition has been filed for this non-signing legal representative		
Given Name (first and middle (if any))	Family Name or Surname		
Legal Representative's Signature			Date
Residence: City	State	Country	Citizenship
Mailing Address			
Mailing Address			
City	State	Zip	Country

Name of Additional Legal Representative, if any:	☐ A petition has been filed for this non-signing legal representative		
Given Name (first and middle (if any))	Family Name or Surname		
Legal Representative's Signature			Date
Residence: City	State	Country	Citizenship
Mailing Address			
Mailing Address			
City	State	Zip	Country

XI.For additional Inventors in the United States

-From www.uspto.gov

http://www.uspto.gov/forms/forms.jsp

PTO/SB/02A (07-07)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet

Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor		
Given Name (first and middle (if any))	Family Name or Surname		
Inventor's Signature			Date
Residence: City	State	Country	Citizenship
Mailing Address			
City	State	Zip	Country

Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor		
Given Name (first and middle (if any))	Family Name or Surname		
Inventor's Signature			Date
Residence: City	State	Country	Citizenship
Mailing Address			
City	State	Zip	Country

Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor		
Given Name (first and middle (if any))	Family Name or Surname		
Inventor's Signature			Date
Residence: City	State	Country	Citizenship
Mailing Address			
City	State	Zip	Country

BIBLIOGRAPHY

- HOWARD B. ROCKMAN - *INTELLECTUAL PROPERTY LAW FOR ENGINEERS AND SCIENTISTS*

- INTERNATIONAL CHAMBER OF COMMERCE(ICC) – *THE ICC INTELLECTUAL PROPERTY ROADMAP 11TH EDITION 2012*

- Daniel Closa, Alex Gardiner, Falk Giemsa, Jorg Machek - *PATENT LAW FOR COMPUTER SCIENTISTS: Steps to Protect Computer - Implemented Inventions*

- UNITED STATES PATENT AND TRADEMARK OFFICE - www.uspto.gov

- EUROPEAN PATENT OFFICE - www.epo.org

- EUROPEAN COMMISSION – www.ec.europa.eu

- WORLD INTELLECTUAL PROPERTY ORGANIZATION - www.wipo.int

- www.patents.com

- www.wikipedia.com

- www.google.com