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(54) METHOD FOR PROVIDING RECOMMENDATIONS USING IMAGE, LOCATION DATA, AND ANNOTATIONS

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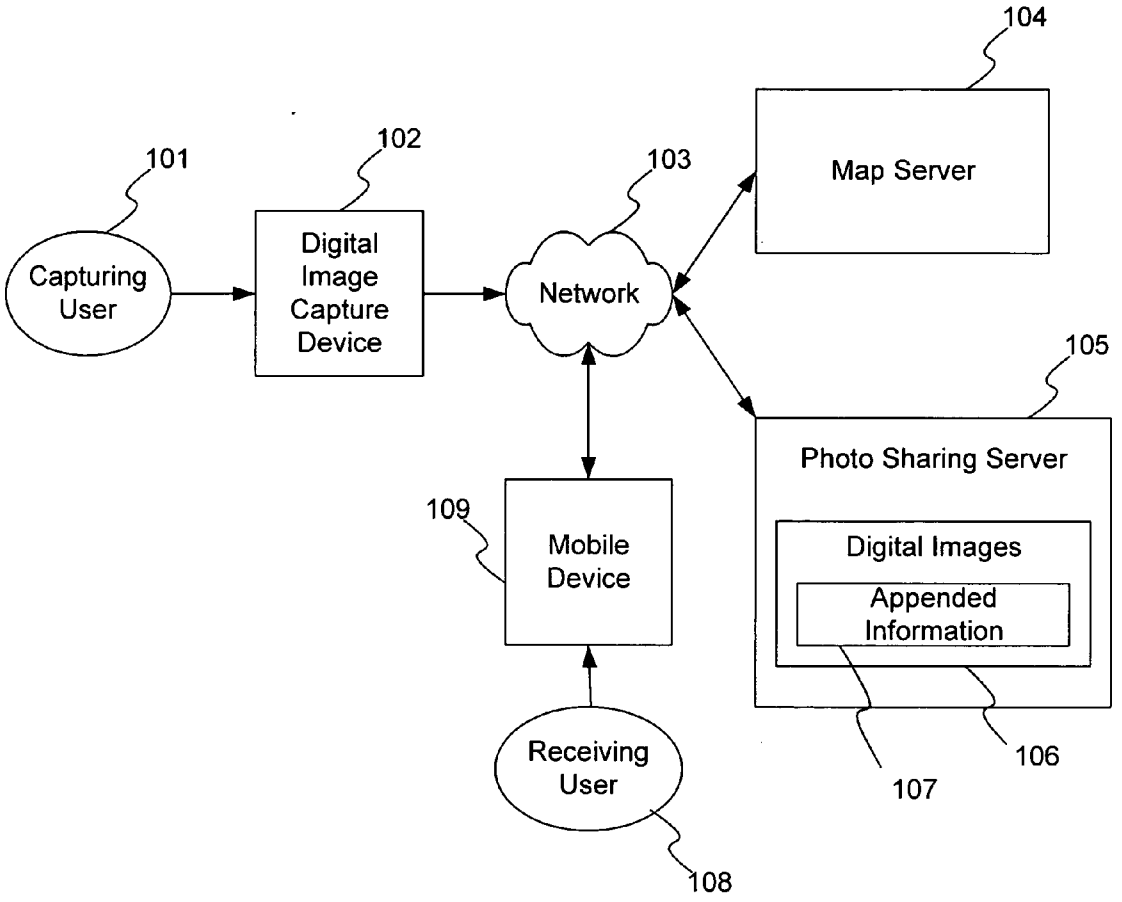
(57) **ABSTRACT**

A method for providing information with digital images includes receiving a digital image of a subject, the digital image including as metadata a geographic position of the subject and other information associated with generating a path to the subject. A path to the subject from the source location can then be generated based on a geographic position of the source location and the metadata included with the digital image. The metadata can be stored on a mobile device and an alert provided when the mobile device is near the geographic position of the subject or if a trajectory of the mobile device does not match the generated path. Relationships with other digital images having associated metadata may also be included. Thus, users have the ability to use their image capture devices to intelligently share digital images of subjects and knowledge of the subjects, delivering greater value from these devices.



Samsung v. Hermes
IPR2025-00953
Exhibit 1005

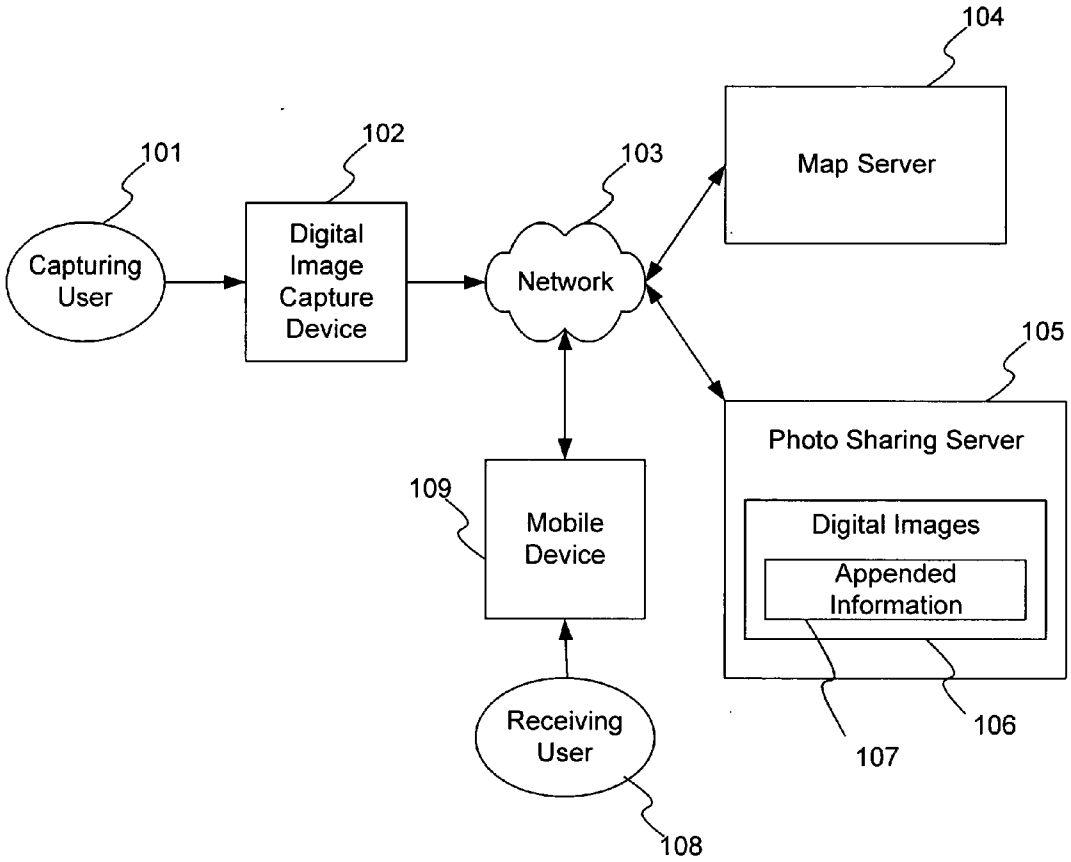

104
Map Server
101
102
103
Capturing User
Digital Image Capture Device
Network
105
Photo Sharing Server
109
Mobile Device
Digital Images
Appended Information
Receiving User
107
106
108

FIG. 1

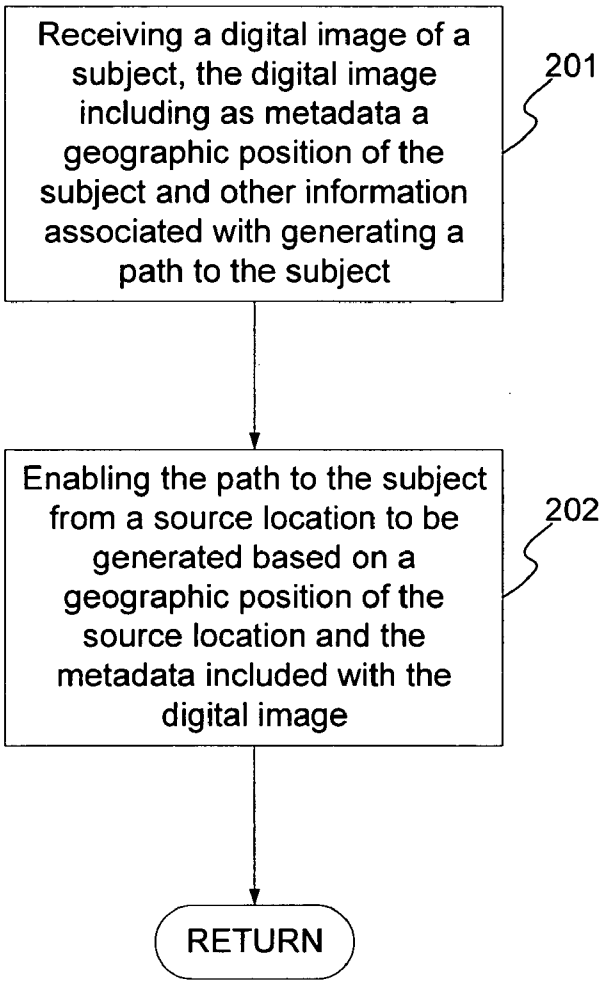

Receiving a digital image of a subject, the digital image including as metadata a geographic position of the subject and other information associated with generating a path to the subject
201
Enabling the path to the subject from a source location to be generated based on a geographic position of the source location and the metadata included with the digital image
202
RETURN

FIG. 2

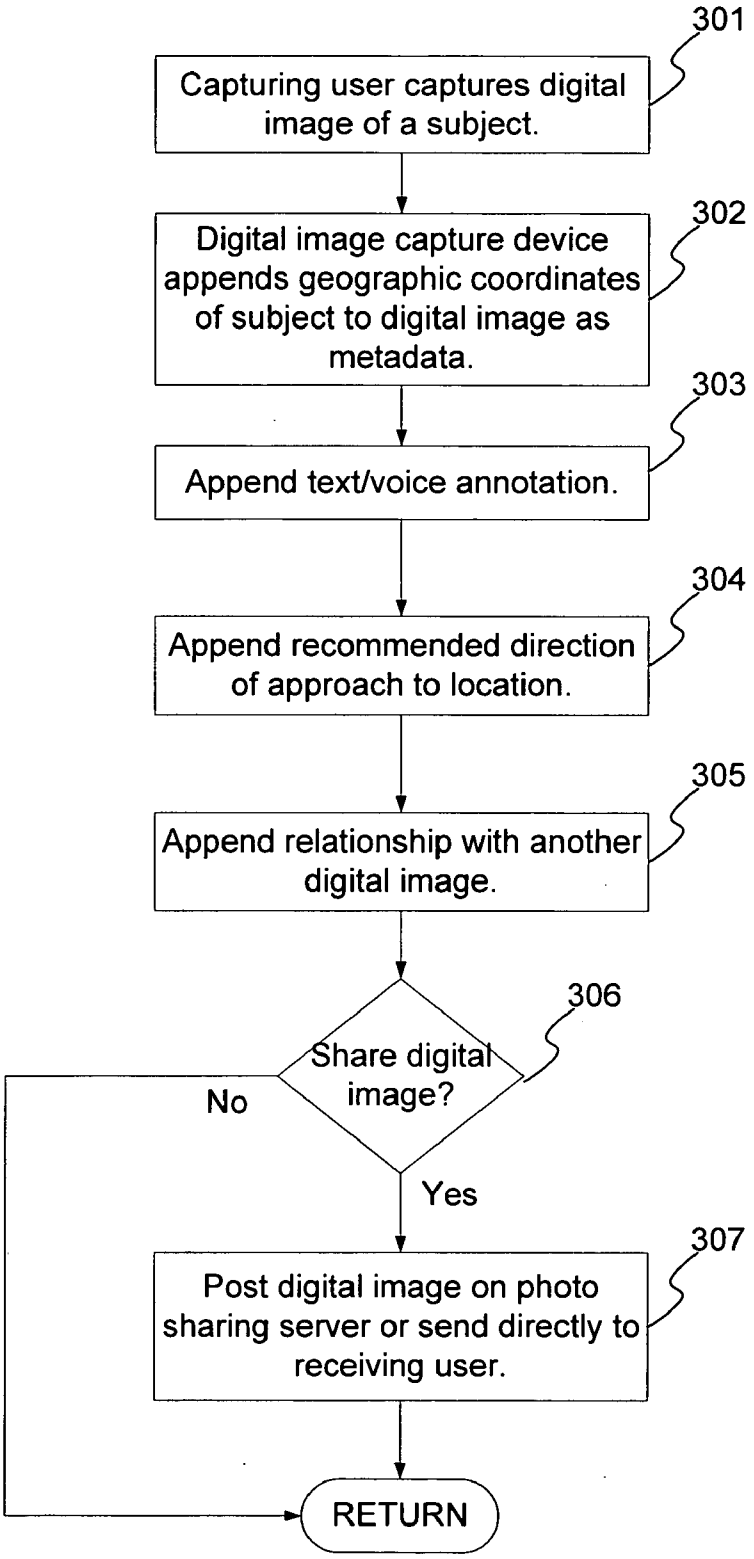

301
Capturing user captures digital image of a subject.
302
Digital image capture device appends geographic coordinates of subject to digital image as metadata.
303
Append text/voice annotation.
304
Append recommended direction of approach to location.
305
Append relationship with another digital image.
306
Share digital image?
No
Yes
307
Post digital image on photo sharing server or send directly to receiving user.
RETURN

FIG. 3

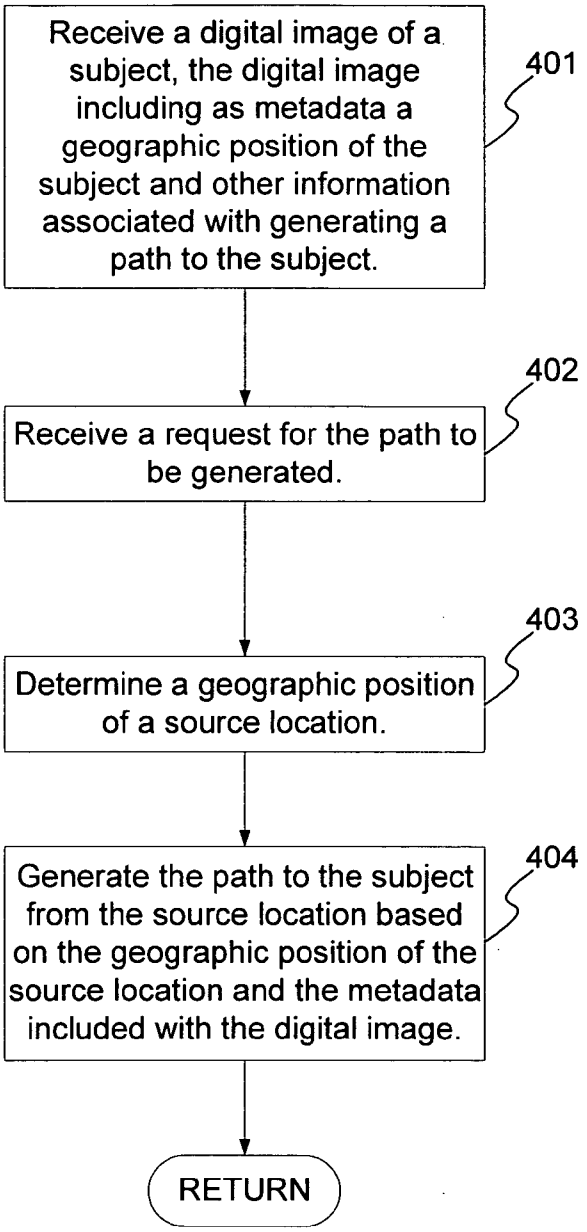

Receive a digital image of a subject, the digital image including as metadata a geographic position of the subject and other information associated with generating a path to the subject.
401
Receive a request for the path to be generated.
402
Determine a geographic position of a source location.
403
Generate the path to the subject from the source location based on the geographic position of the source location and the metadata included with the digital image.
404
RETURN

FIG. 4

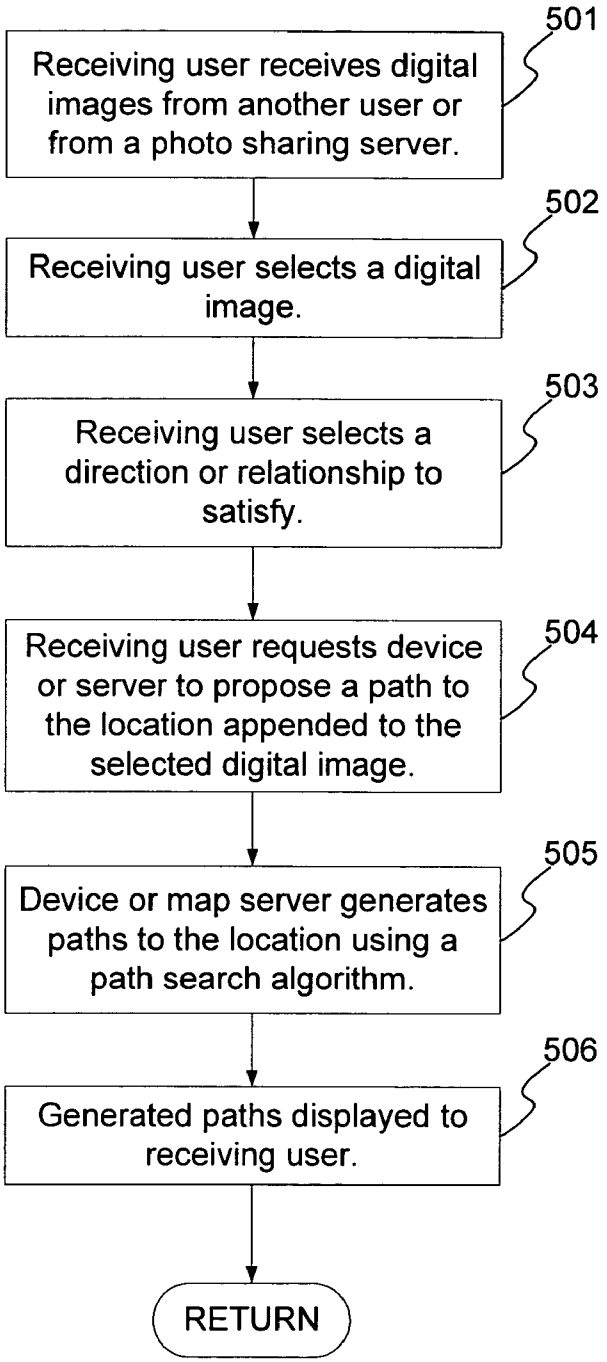

501
Receiving user receives digital images from another user or from a photo sharing server.
502
Receiving user selects a digital image.
503
Receiving user selects a direction or relationship to satisfy.
504
Receiving user requests device or server to propose a path to the location appended to the selected digital image.
505
Device or map server generates paths to the location using a path search algorithm.
506
Generated paths displayed to receiving user.
RETURN

FIG. 5

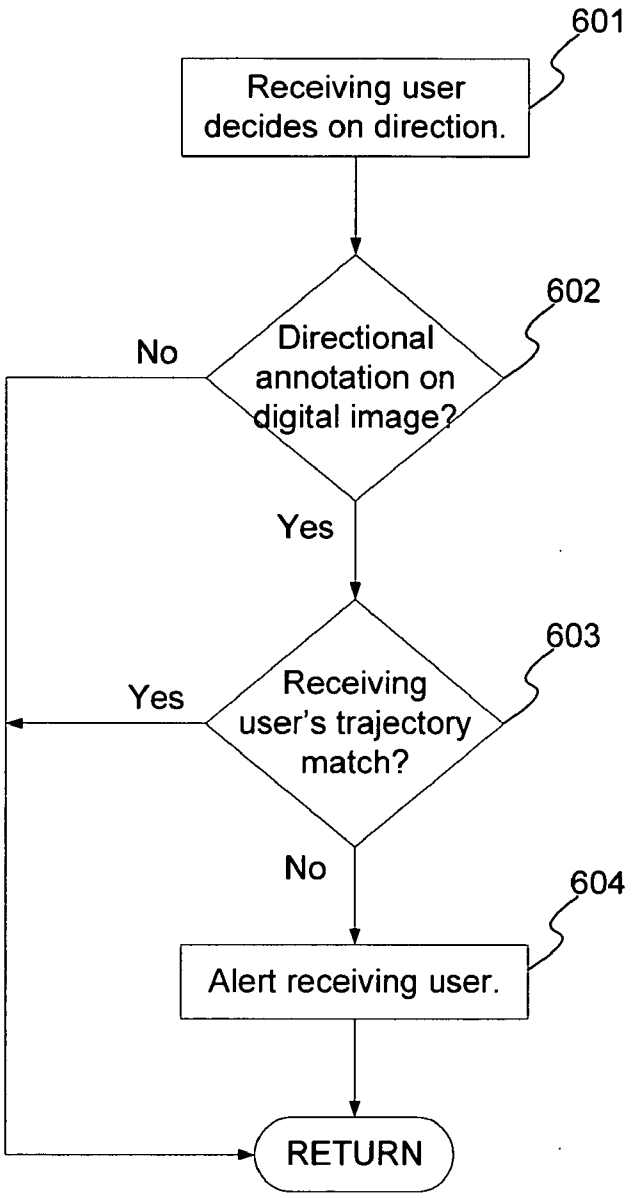

601
Receiving user decides on direction.
602
Directional annotation on digital image?
No
Yes
603
Receiving user's trajectory match?
Yes
No
604
Alert receiving user.
RETURN

FIG. 6

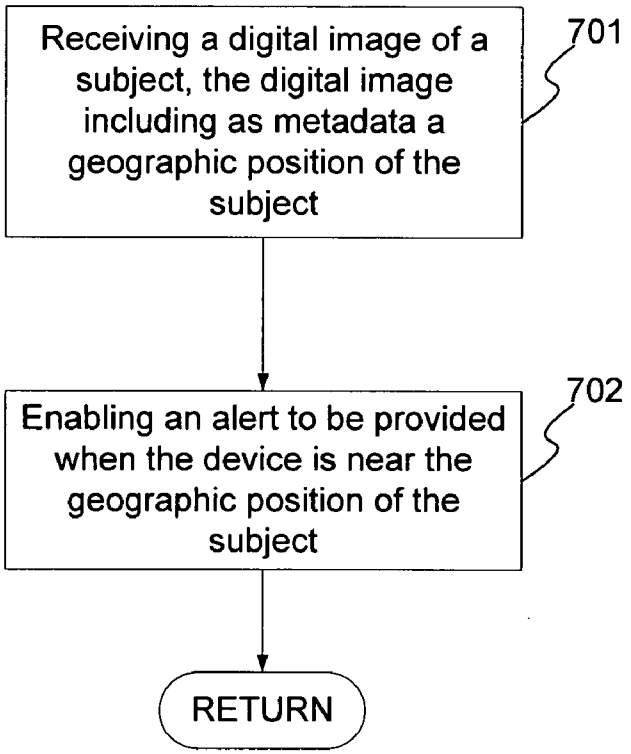

Receiving a digital image of a subject, the digital image including as metadata a geographic position of the subject
701
Enabling an alert to be provided when the device is near the geographic position of the subject
702
RETURN

FIG. 7

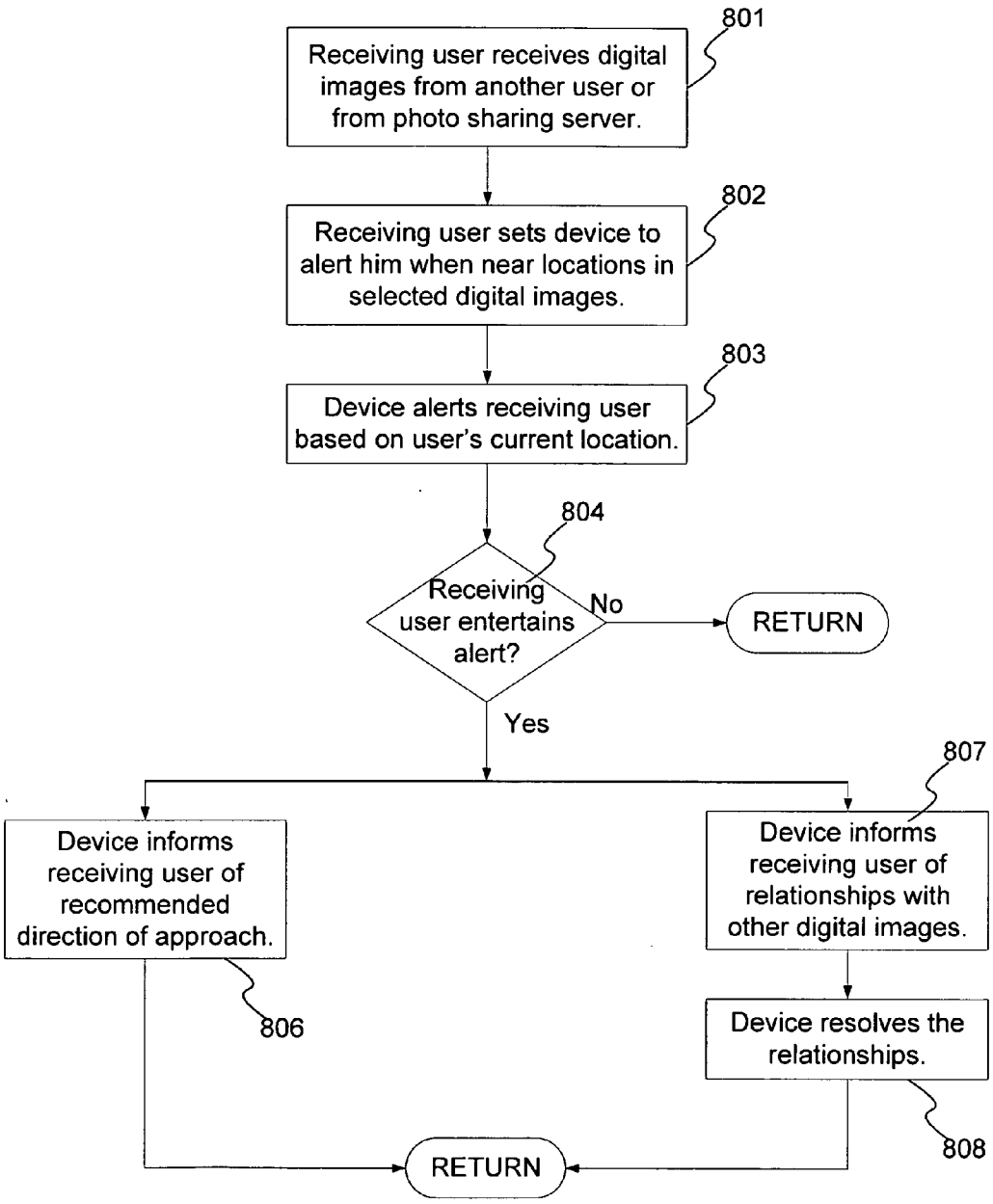

801
Receiving user receives digital images from another user or from photo sharing server.
802
Receiving user sets device to alert him when near locations in selected digital images.
803
Device alerts receiving user based on user's current location.
804
Receiving user entertains alert?
No
RETURN
Yes
807
Device informs receiving user of recommended direction of approach.
Device informs receiving user of relationships with other digital images.
806
Device resolves the relationships.
808
RETURN

FIG. 8

METHOD FOR PROVIDING RECOMMENDATIONS USING IMAGE, LOCATION DATA, AND ANNOTATIONS

FIELD OF THE INVENTION

[0001] The present invention relates to photo sharing services, and more particularly to sharing annotations with the digital images in web photo sharing services.

BACKGROUND OF THE INVENTION

[0002] Many people, especially travelers, explorers, and hobbyists, use digital image capture devices, such as digital cameras, camera cell phones, personal digital assistants, to capture images of interesting subjects. They assemble these images onto web sites or travelogues or otherwise share these pictures with others.

[0003] Typically, the digital images are uploaded and any information the user wishes to share, such as location coordinates, text descriptions, and/or voice comments are then appended as annotations to the images. However, this appended information is limited, both in its scope and in its use. The digital image capture device that receives these images is not able to actively interface with the user based on this appended information in a meaningful fashion.

[0004] Accordingly, there exists a need for an improved method for providing recommendations with digital images in the sharing of the digital images. The method should append information to digital images that allow a digital image capture device to more actively and meaningfully interact with a recipient of the images. Possible appended information should include a recommended direction of approach to a location of the image subject and relationships between images. The method should also allow alerts if the recommendations are being violated, alerts if the user is near the location of a selected image subject, and allow the user to request a path to the location. The present invention addresses such a need.

SUMMARY OF THE INVENTION

[0005] A method for providing information with digital images includes receiving a digital image of a subject, the digital image including as metadata a geographic position of the subject and other information associated with generating a path to the subject. A path to the subject from the source location can then be generated based on a geographic position of the source location and the metadata included with the digital image. The metadata can be stored on a mobile device and an alert provided when the mobile device is near the geographic position of the subject or if a trajectory of the mobile device does not match the generated path. Relationships with other digital images having associated metadata may also be included. In this manner, users have the ability to use their image capture devices to intelligently share digital images of subjects and knowledge of the subjects, delivering greater value from these devices.

BRIEF DESCRIPTION OF THE FIGURES

[0006] FIG. **1** illustrates a preferred embodiment of a system for providing information with digital images in the sharing of the digital images in accordance with the present invention.

[0007] FIG. **2** is a flowchart illustrating a preferred embodiment of a method for providing information with digital images in the context of generating paths.

[0008] FIG. **3** is a flowchart illustrating in more detail the method illustrated in FIG. **2** for providing information with digital images in the context of appending information to the digital images used in generating paths.

[0009] FIG. **4** is a flowchart illustrating a more detailed embodiment of the path request option provided by the method in accordance with the present invention.

[0010] FIG. **5** is a flowchart illustrating an example of the path request option provided by the method in accordance with the present invention.

[0011] FIG. **6** is flowchart illustrating an example of the violation alert option provided by the method in accordance with the present invention.

[0012] FIG. **7** is a flowchart illustrating a preferred embodiment of the alert option of a nearby location provided by the method in accordance with the present invention.

[0013] FIG. **8** is a flowchart illustrating in more detail the alert option of a nearby location provided by the method in accordance with the present invention.

DETAILED DESCRIPTION

[0014] The present invention provides a method for providing information with digital images in the sharing of the digital images. The following description is presented to enable one of ordinary skill in the art to make and use the invention and is provided in the context of a patent application and its requirements. Various modifications to the preferred embodiment will be readily apparent to those skilled in the art and the generic principles herein may be applied to other embodiments. Thus, the present invention is not intended to be limited to the embodiment shown but is to be accorded the widest scope consistent with the principles and features described herein.

[0015] FIG. **1** illustrates a preferred embodiment of a system for providing information with digital images in the sharing of the digital images in accordance with the present invention. The system includes an image capture device **102**, such as a digital camera, a camera phone, a personal digital assistant including an image capture subsystem, etc. The device **102** is used by a capturing user **101** to capture images of various subjects. The device **102** can upload any captured digital images **106** onto the photo sharing server **105**, via a network **103**, such as the Internet. The digital images **106** include information **107** appended to them as metadata. The information **107** includes location data and user specified annotations. The location data can include the geographical coordinates and/or altitude of the subject that can be provided by global positioning system (GPS) unit (not shown) included in the device **102**.

[0016] The user specified annotations may include any information the capturing user **101** wishes to share with receiving users **108**, including information other than the geographical coordinates of the subject that can be used in generating a path to the subject. For example, the annotations can provide a recommended direction of approach to the location, relationships between multiple images, or any other information that allow the receiving user **108** to more

meaningfully interact with the images. The receiving users **108** can then access the digital images **106**, along with the appended information **107**, using a mobile device **109**, such as a cell phone, camera phone, PDA, wireless digital camera, navigational system or device, and the like. The mobile device **109** can receive the digital images **106** and appended information **107** by accessing the photo sharing server **105** via the network **103**.

[**0017**] FIG. **2** is a flowchart illustrating a preferred embodiment of a method for providing information with digital images in the context of generating paths. First, a digital image of a subject is received, via step **201**, with the digital image including as metadata a geographic position of the subject and other information associated with generating a path to the subject. For example, the user **101** can capture a digital image **106** of the subject. The geographic position of the subject and the other information associated with generating a path to the subject is then appended to the digital image **106** as part of the appended information **107**. The digital image **106** and its appended information **107** are then uploaded to a photo sharing server **105**. They can be uploaded and displayed as part of a web site. Other users **108** can then access this web site, and their respective mobile devices **109** can receive the digital image **106** and its information **107**. However, the digital image **106** and information **107** can also be shared directly between users without departing from the spirit and scope of the present invention. Once the digital image is received, the path to the subject from a source location may be generated based on a geographic location of the source location and the metadata included with the digital image, via step **202**.

[**0018**] FIG. **3** is a flowchart illustrating in more detail the method of FIG. **2** for providing information with digital images in the context of appending information to the digital images used in generating paths. First, the capturing user **101** captures a digital image of a subject, via step **301**. The digital image capture device **102** then appends the location of the subject **302** to the image, via step **302**. In this embodiment, the location information is geographical coordinates of the subject, provided, for example, by the GPS unit described above. Optionally, the user **101** may append text and/or voice annotations to the image, via step **303**. The user **101** also appends a recommended direction of approach to the location, via step **304**. For example, the device **102** can capture the user's **101** direction of approach in visiting the location. Then, perhaps with the help of a map server **104** coupled to the device **102** as shown in FIG. **1** or a GPS unit included in the capture device, the device **102** specifies a compass direction for the approach or a street name and appends this information to the image.

[**0019**] Optionally, the user **101** may also specify and append a relationship of the image with another digital image, via step **305**. The relationship can be a grouping of the digital images or a recommended order of visitation of locations in digital images. For example, the user **101** may scroll through previously captured images, selects one or more of the images, and then selects an operator to define the relationship between the captured image and the selected images. The operator can be binary operators, such as AND, BEFORE, AFTER, etc. For example, the user **101** may wish to indicate that one who visits the location in an image should also visit locations in other images. The user **101** can select the relevant previously captured images and the AND operator to define this relationship. This relationship is then appended to the captured image.

[**0020**] If the user **101** wishes to share the captured digital image, via step **306**, then the image is posted on the photo sharing server **105**, or alternatively, it can be sent directly to a receiving user's **108** mobile device **109**, via step **307**. The receiving user **108** then receives the digital image and can view/play the text/voice annotations, view the recommended direction of approach, and/or view the relationships the digital image has with any other digital images.

[**0021**] For example, assume that the user **101** takes a trip on a scenic route. As the user **101** passes an interesting place, he notices a particularly exciting scene. He takes an image of this scene with the digital image capture device **102**, via step **301**. The device **102** automatically records the geographical coordinates of the place using, for example, the GPS unit described above. The device **102** can then append the geographical coordinates to the image as metadata, via step **302**. The user **101** can also specify that a recommended direction of approach to the subject be appended to the image **106** as metadata, via step **304**, such as "approach from the East". The user **101** places this image with the appended geographical coordinates and recommended direction of approach on a travel web site, via steps **306-307**. Another user **108**, who has an interest in the same geographical region, can retrieve the images and its appended information.

[**0022**] For another example, assume that a user **101** takes a road or train trip and captures images of interesting sights seen through the windows, via step **301**. These sights can include those that are otherwise unmarked on guidebooks and may just reflect the user's personal judgment about beauty and interestingness. The user **101** may wish to share the images with others of similar hobbies or interests. The user **101** can then include annotations concerning a recommended direction of approach to the sights, as well as the relevant hobby or interest topic and/or a description of how the image relates to that topic. These annotations, along with location data for the sights, are appended to the images captured by the user **101**, via steps **302-304**. For example, birders or botanists may have special reasons to take a certain picture, as would history buffs, archaeologists, or people with an interest in bridges. The user **101** can then share these images and knowledge of the sights with other users **108**, via steps **306-307**.

[**0023**] For another example, in commercial settings, the user **101** can capture an image of an item in a store that is a good deal, such as a rug, dress, or furniture, via step **301**. In some cases, an image of the item is more helpful to other users than a description with words. The user **101** can include directions to the store, as well as the name of the store, the price of the item, and any other helpful information. These information are then appended to the captured image, via steps **302-305**. The user **101** can now share the image and its appended information with family and friends, via steps **306-307**.

[**0024**] Once the receiving user **108** receives the digital images captured by the capturing user **101**, the method in accordance with the present invention can provide the option for the receiving user **108** to select one or more of the digital images prior to visiting the location in the images and to request paths to the locations. FIG. **4** is a flowchart illus-

trating a preferred embodiment of the path request option provided by the method in accordance with the present invention. A digital image of a subject including as metadata a geographic position of the subject and other information associated with generating a path to the subject is first received, via step **401**. For example, the digital image can be received by the mobile device **109**. Next, a request for the path to the subject is received, via step **402**. For example, the user **108** can select the digital image on the mobile device **109** can request the path to the subject of the digital image. A geographic position of a source location is then determined, via step **403**. The source location is the starting point of the path and can be the position of the mobile device **109** or the receiving user **108** requesting the path. Then, the path to the subject from the source location is generated based on the geographic position of the source location and the metadata included with the digital image, via step **404**.

[**0025**] FIG. **5** is a flowchart illustrating an example of the path request option provided by the method in accordance with the present invention. First, the receiving user **108** receives digital images onto his device **109**, either from the photo sharing server **105** or directly from the capturing user **101**, via step **501**. The receiving user **108** can then select a digital image, via step **502**. For the selected digital image, the receiving user **108** selects any direction or relationship needed to satisfy an informational message, prompt, or alert by the mobile device **109**, via step **503**. For example, if the digital image has appended to it several recommended streets for approaching the location, the receiving user **108** can select one of the recommended directions. If the digital image has appended to it a "visit after" relationship with more than one digital image, the receiving user **108** can select which location to visit afterwards. Alternatively, rather than a receiving user **108** having to explicit select images **106** in step **501**, any received image in the mobile device **109** can automatically generate the informational messages, prompts, or alerts for the receiving user **108** as the mobile device **109** nears the location of the image subject.

[**0026**] Next, the receiving user **108** requests that the device **109** or the map server **104** generate paths to the location using a path search algorithm, via step **505**. This device **109** can be configured to automatically determine whether the map server **104** or device **109** is to generate the paths, or the choice can be determined by the device **109** based on it's inherent capabilities. Path search algorithms are known in the art and will not be described here. The device **109** or map server **104** can generate the paths, and the generated paths can be displayed to the receiving user **108** using the mobile device **109**, via step **506**. When generated by the mobile device **109**, the device **109** can use the other information included as metadata, such as a recommended direction of approach, to generating recommended path to the subject.

[**0027**] When the map server **104** is used to generate the path, the mobile device **109** can send the receiving user's **108** current location to the map server **104** as a source location in the generated path, for example, using the device's **109** GPS unit described above. The mobile device can also send the geographic position of the subject of the digital image **106** that is included as metadata to the image to map server **104**. Using this positional information, the map server **104** can generate a path from the source location to the subject using the above-described path search algorithms. The generated path can then be downloaded to the mobile device **109** from the map server **104** to provide informational messages, prompts, or alerts to the receiving user **108**.

[**0028**] According to another exemplary embodiment, the mobile device **109** can modify the geographic position of the subject or the source location prior to sending this data as positional information to the map server **104**. The modification can be based on the other information includes as metadata with the digital image **106**, such as a recommended direction of approach to the subject. The map server **104** can then generate the path to the subject using the modified positional information, such that the other information included with the digital information as metadata can be indirectly considered by the map server **104** in generating the path. Alternatively, the map server **104** can be configured to directly consider the other information included as metadata to generate the desired path. Again, once generated, the path to the subject can downloaded to the mobile device **109** from the map server **104** to provide informational messages, prompts, or alerts to the receiving user **108**.

[**0029**] The method in accordance with the present invention further provides the option for the receiving user **108** to receive alerts from the device **109** when the receiving user **108** violates the recommended direction of approach or path. FIG. **6** is flowchart illustrating an example of the violation alert option provided by the method in accordance with the present invention. First, the receiving user **108** decides on a direction to a location in a digital image, via step **601**. The device **109** then determines if the digital image has a directional annotation, via step **602**. The directional annotation includes a recommended direction of approach or a path, as described above. If there is a directional annotation, the device **109** determines if the receiving user's **108** trajectory matches, via step **603**. For example, the device **109** can receive the receiving user's **108** current location using the GPS unit describe above, and can use a plurality of this information to calculate the receiving user's **108** trajectory. If the receiving user's **108** trajectory does not match the directional annotation, then the device **109** sends an alert to the receiving user **108**, via step **604**.

[**0030**] The method in accordance with the present invention further provides the option for the receiving user **108** to receive alerts from the device **109** when the receiving user **108** is near the location in the image. FIG. **7** is a flowchart illustrating a preferred embodiment of the alert option of a nearby location provided by the method in accordance with the present invention. First, a digital image of a subject is received, via step **701**, the digital image including as metadata a geographic position of the subject. For example, the digital image can be received by the mobile device **109**. Then, an alert may be provided when the device is near the geographic position of the subject, via step **702**.

[**0031**] For example, the receiving user **108** downloads digital images onto his device **109** prior to or during a visit to the given geographical region, via step **701**. As the receiving user **108** moves through the region, he may come close to one or more of the locations in the digital images. The receiving user's **108** device **109** would then alert him to the location being nearby and show the receiving user **108** the digital image of it, via step **702**. If the receiving user **108** is interested, he can proceed to that location using the recommended direction of approach.

[0032] FIG. **8** is a flowchart illustrating in more detail the alert option of a nearby location provided by the method in accordance with the present invention. First, the user **108** receives digital images from another user or from a photo sharing server, via step **801**. The receiving user **108** sets his device **109** to alert him when he is near the locations in the selected digital images, via step **802**. The device **109** then sends alerts to the receiving user **108** based on his current location, via step **803**, when the receiving user **108** nears one of the locations. If the receiving user **108** entertains the alert, via step **804**, i.e., decides to visit the location, the device **109** can then display any of the appended information **107** to the receiving user **108**.

[0033] For example, if the digital image pertaining to the alert includes a recommended direction of approach, then the device **109** informs the receiving user **108** of the recommendation, via step **805**. If the digital image pertaining to the alert includes relationships with other digital images, then the device **109** informs the receiving user **108** of these relationships, via step **806**. The device **109** then resolves these relationships, via step **807**. For example, assume that the relationship is image X before image Y. If the location in image X is visited first, the receiving user **108** is reminded to visit the location in of image Y later. If the location in image Y is visited first, the receiving user **108** is alerted that he should visit the location in image X first.

[0034] Although the preferred embodiment is described with the above combinations, one of ordinary skill in the art will understand that each feature can be provided independently of each other and in any number of combinations without departing from the spirit and scope of the present invention.

[0035] A method for providing information with digital images in the sharing of the digital images has been disclosed. The method appends information to digital images captured by a user, including a recommended direction of approach. Relationships with other digital images may also be appended. These images can then be uploaded to a photo sharing server via a network. Other users can access the photo sharing server via the network and view the images and the appended information. The receiving users have the option to request a path to a location in a digital image, request alerts when a recommendation is violated, or request alerts when the user is near a location in a digital image. In this manner, users have the ability to use their image capture devices to intelligently share digital images of subjects and knowledge of the subjects. This intelligent sharing enables the users to carry on deeper interactions via the use of their devices, thus delivering greater value from these devices.

[0036] The executable instructions of a computer program as illustrated in FIGS. **2-8** for providing information using digital images can be embodied in any computer readable medium for use by or in connection with an instruction execution system, apparatus, or device, such as a computer based system, processor containing system, or other system that can fetch the instructions from the instruction execution system, apparatus, or device and execute the instructions.

[0037] As used here, a "computer readable medium" can be any means that can contain, store, communicate, propagate, or transport the program for use by or in connection with the instruction execution system, apparatus, or device. The computer readable medium can be, for example but not limited to, an electronic, magnetic, optical, electromagnetic, infrared, or semiconductor system, apparatus, device, or propagation medium, such as the removable storage device **116** shown in FIG. **1**. More specific examples (a non exhaustive list) of the computer readable medium can include the following: an electrical connection having one or more wires, a portable computer diskette, a random access memory (RAM), a read only memory (ROM), an erasable programmable read only memory (EPROM or Flash memory), an optical fiber, and a portable compact disc read only memory (CDROM).

[0038] Although the present invention has been described in accordance with the embodiments shown, one of ordinary skill in the art will readily recognize that there could be variations to the embodiments and those variations would be within the spirit and scope of the present invention. Accordingly, many modifications may be made by one of ordinary skill in the art without departing from the spirit and scope of the appended claims.

What is claimed is:

1. A method for providing information using digital images, comprising:

receiving a digital image of a subject, the digital image including as metadata a geographic position of the subject and other information associated with generating a path to the subject;

wherein the path to the subject from a source location can be generated based on a geographic position of the source location and the metadata included with the digital image.

2. The method of claim 1, wherein the other information comprises a recommended direction of approach to the subject.

3. The method of claim 1, wherein the other information comprises a relationship between the digital image and another digital image having associated metadata.

4. The method of claim 3, wherein the relationship comprises a grouping of digital images each having associated metadata.

5. The method of claim 3, wherein the relationship comprises a recommended order of visitation of locations associated with the digital images.

6. The method of claim 1, wherein the digital image and metadata are received in a mobile device, the method further comprising:

providing an alert if the mobile device nears the geographic position of the subject or if a trajectory of the mobile device does not match the generated path.

7. The method of claim 6, further comprising:

displaying the digital image when the mobile device nears the geographic position of the subject.

8. The method of claim 6, further comprising:

displaying a recommended direction of approach when the mobile device nears the geographic position of the subject.

9. The method of claim 6, further comprising:

displaying a relationship between the digital image and another digital image received in the mobile device when the mobile device nears the geographic position of the subject.

10. The method of claim 6, wherein the path to the subject is generated by the mobile device.

11. The method of claim 1, comprising:

receiving the digital image and metadata in a photo sharing server from a digital image capture device; and

sending the digital image and metadata from the photo sharing server to a mobile device.

12. A computer readable medium containing a computer program for providing information using digital images, the computer program comprising executable instructions for:

receiving a digital image of a subject, the digital image including as metadata a geographic position of the subject and other information associated with generating a path to the subject; and

generating the path to the subject from a source location based on a geographic position of the source location and the metadata included with the digital image.

13. The medium of claim 12, wherein the other information comprises a recommended direction of approach to the subject.

14. The medium of claim 12, wherein the other information comprises a relationship between the digital image and another digital image having associated metadata.

15. The medium of claim 12, further comprising executable instructions for:

providing an alert if the generated path is not being followed or if the geographic position of the subject is near a current location.

16. A system, comprising:

a photo sharing server configured to receive a digital image of a subject, the digital image including as metadata a geographic position of the subject and other information associated with generating a path to the subject;

wherein the system is configured to generate the path to the subject from a source location based on a geographic position of the source location and the metadata included with the digital image.

17. The system of claim 16, wherein the other information comprises a recommended direction of approach to the subject.

18. The system of claim 16, wherein the other information comprises a relationship between the digital image and another digital image having associated metadata.

19. The system of claim 16, comprising:

a mobile device for receiving the digital image from the photo sharing server, wherein the mobile device provides an alert if the mobile device nears the geographic position of the subject or if a trajectory of the mobile device does not match the generated path.

20. The system of claim 19, wherein the mobile device is configured to generate the path to the subject from the source location based on the geographic position of the source location and the metadata included with the digital image.

21. The system of claim 19, further comprising a map server configured to receive geographic positional information based on the geographic positions of the subject and the source location and to generate therefrom the path to the subject from the source location.

22. The system of claim 21, wherein the mobile device is configured to modify the geographic position of the subject or the source location prior to sending the positional information to the map server, the modification based on the other information associated with generating the path to the subject.

23. A device, comprising:

a digital image of a subject comprising appended metadata, wherein the appended metadata comprises a geographic position of the subject and other information associated with generating a path to the subject,

wherein the device determines a geographic position of a source location, and generates the path to the subject from the source location based on the geographic position of the source location and the metadata appended to the digital image.

24. The device of claim 23, wherein the other information comprises a recommended direction of approach to the subject.

25. The device of claim 23, wherein the other information comprises a relationship between the digital image and another digital image having associated metadata.

26. The device of claim 25, wherein the relationship comprises a grouping of digital images each having associated metadata.

27. The device of claim 25, wherein the relationship comprises a recommended order of visitation of locations associated with digital images.

28. The device of claim 22, wherein the device further provides an alert if the device is not following the path or if the device nears the geographic position of the subject.

29. The device of claim 28, wherein the device further determines if the device's trajectory matches the path and provides the alert if the device's trajectory does not match the path.

30. The device of claim 28, wherein the device further displays the digital image when the device nears the geographic position of the subject.

31. The device of claim 28, wherein the device further displays a recommended direction of approach when the device nears the geographic position of the subject.

32. The device of claim 28, wherein the device further displays a relationship between the digital image and another digital image having associated metadata when the device nears the geographic position of the subject.

33. A method for providing information using digital images, comprising:

receiving a digital image of a subject, the digital image including as metadata a geographic position of the subject;

wherein an alert can be provided when the device is near the geographic position of the subject.

34. The method of claim 33, wherein the metadata comprises a recommended direction of approach to the subject and the alert includes the recommended direction of approach.

35. The method of claim 33, wherein the metadata further comprises other information comprising a relationship between the digital image and another digital image.

36. The method of claim 33, further comprising:

displaying a relationship between the digital image with another digital image as the alert.

37. A computer readable medium containing a computer program for providing information using digital images, the computer program comprising executable instructions for:

receiving a digital image of a subject, the digital image including as metadata a geographic position of the subject; and

providing an alert when the device is near the geographic position of the subject.

38. The medium of claim 37, wherein the metadata comprises a recommended direction of approach to the subject and the alert includes the recommended direction of approach.

39. The medium of claim 37, wherein the metadata further comprises other information comprising a relationship between the digital image and another digital image.

40. A system, comprising:

a photo sharing server configured to receive a digital image of a subject the digital image including as metadata a geographic position of the subject; and

a mobile device for receiving the digital image and metadata from the photo sharing server, wherein the mobile device is configured to provide an alert when the mobile device nears the geographic position of the subject.

41. The system of claim 40, wherein the metadata comprises a recommended direction of approach to the subject and the alert includes the recommended direction of approach.

42. The system of claim 40, wherein the metadata further comprises other information comprising a relationship between the digital image and another digital image.

43. The system of claim 42, wherein the mobile device displays the relationship between the digital image and another digital image as the alert.

44. A device, comprising:

a digital image of a subject comprising appended metadata, wherein the appended metadata comprises a geographic position of the subject, wherein the device is configured to provide an alert when the device is near the geographic position of the subject.

45. The device of claim 44, wherein the metadata comprises a recommended direction of approach to the subject and the alert includes the recommended direction of approach.

46. The device of claim 44, wherein the appended metadata further comprises a relationship between the digital image and another digital image.

47. The device of claim 46, wherein the device displays the relationship between the digital image and another digital image as the alert.

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