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Norman, Jr.

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(54) **METHODS AND SENSOR ARRAY PLATFORMS FOR CREATING AND MONITORING CRYPTOGRAPHIC BLOCKCHAIN IMAGES AND EXECUTING PROGRAMS BASED ON MONITORED IMAGES**

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H04L 9/00 (2022.01)

(52) **U.S. Cl.**
CPC . ***H04L 9/00*** (2013.01); *H04L 9/50* (2022.05)

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CPC H04L 9/00; H04L 9/50
See application file for complete search history.

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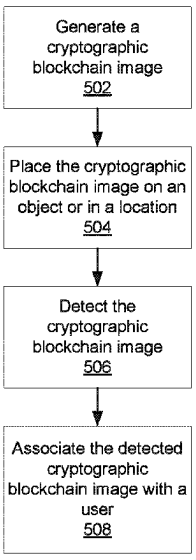
(57) **ABSTRACT**

In one embodiment, a sensor array platform creates and monitors cryptographic blockchain images and executes programs based on monitored images and methods therefor. In one embodiment, a method comprises generating a cryptographic blockchain image; placing the cryptographic blockchain image on an object or in a location; detecting the cryptographic blockchain image; and associating the detected cryptographic blockchain image with a user.

19 Claims, 6 Drawing Sheets



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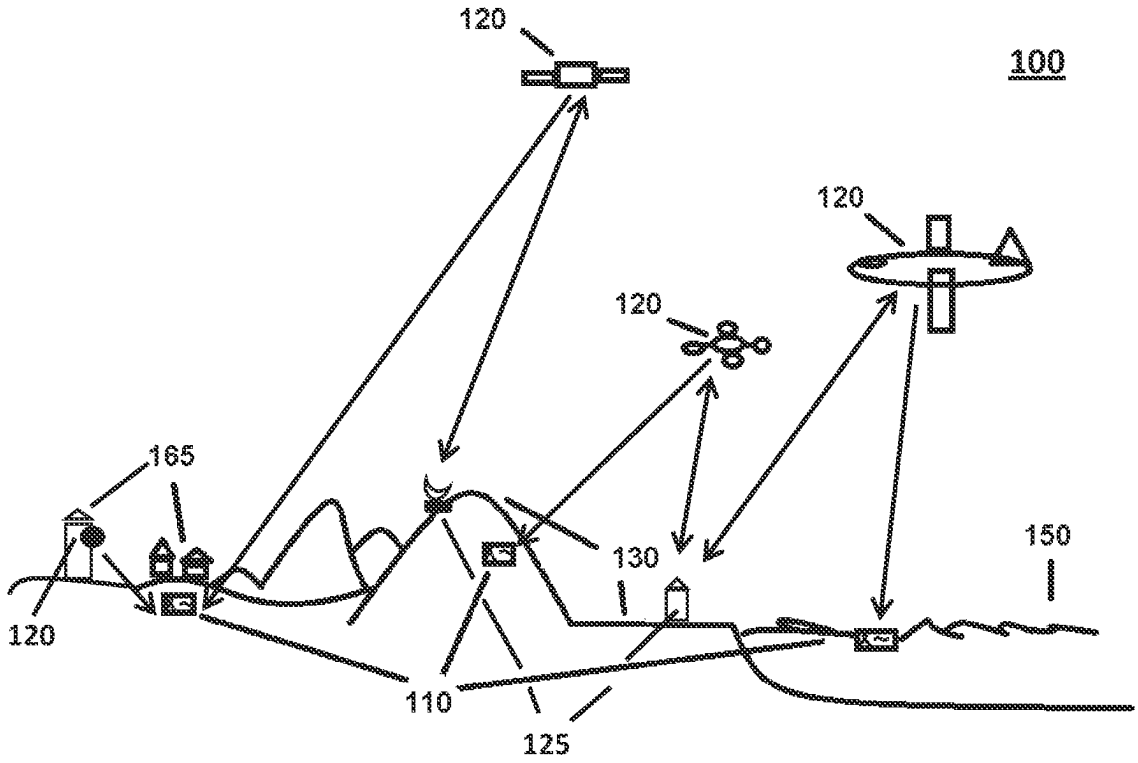

Figure 1

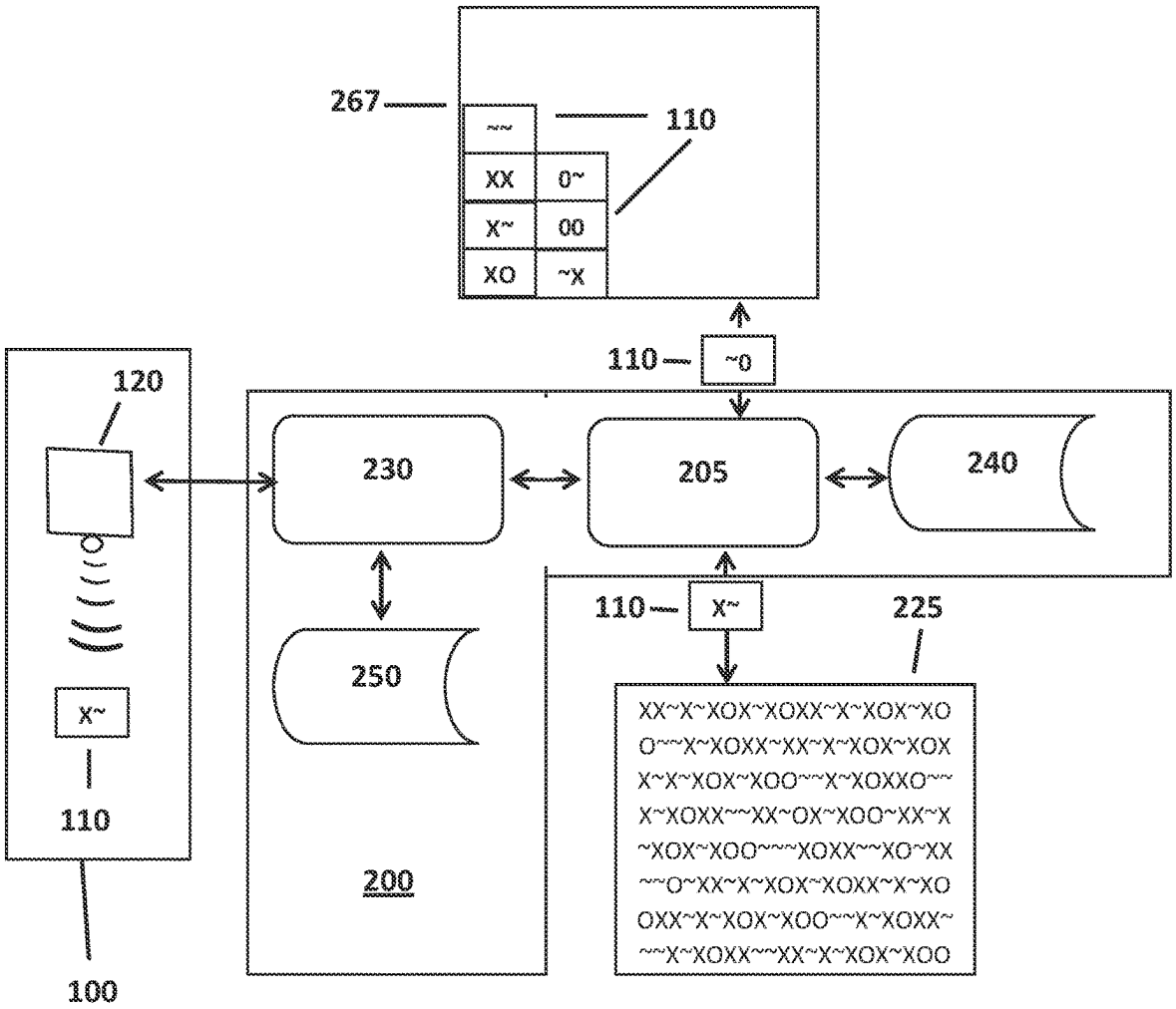
267
~~
110
XX
0~
X~
00
XO
~X
110
~0
120
230
205
240
110
X~
225
250
XX~X~XOX~XOXX~X~XOX~XO
O~~X~XOXX~XX~X~XOX~XOX
X~X~XOX~XOO~~X~XOXXO~~
X~XOXX~~XX~OX~XOO~XX~X
~XOX~XOO~~~XOXX~~XO~XX
~~O~XX~X~XOX~XOXX~X~XO
OXX~X~XOX~XOO~~X~XOXX~
~~X~XOXX~~XX~X~XOX~XOO
110
100
200

Figure 2

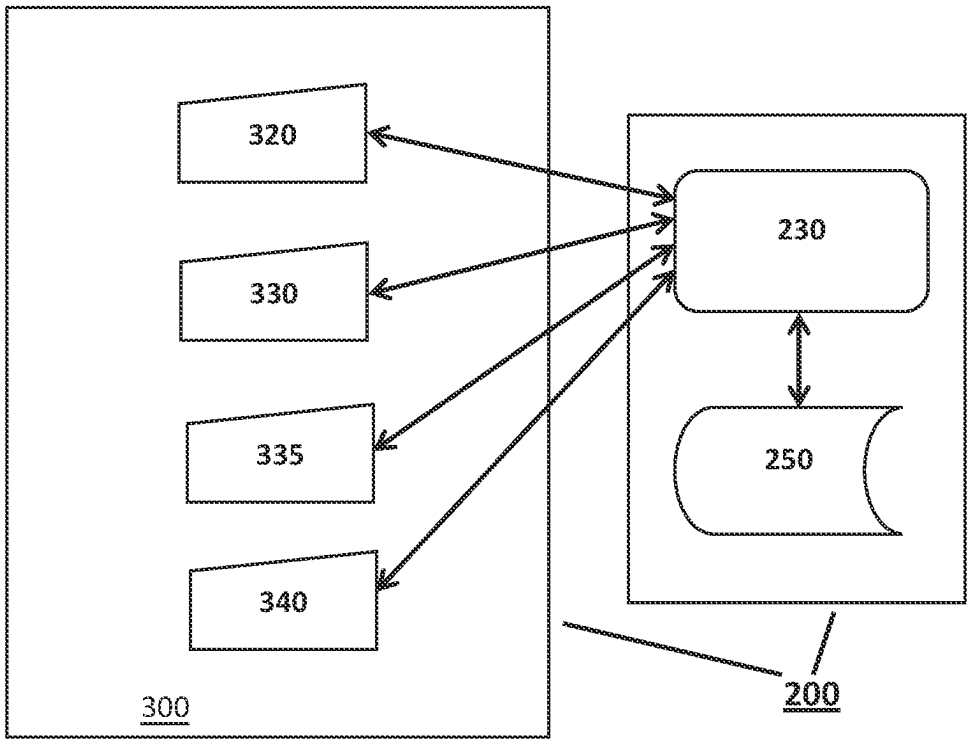

Figure 3

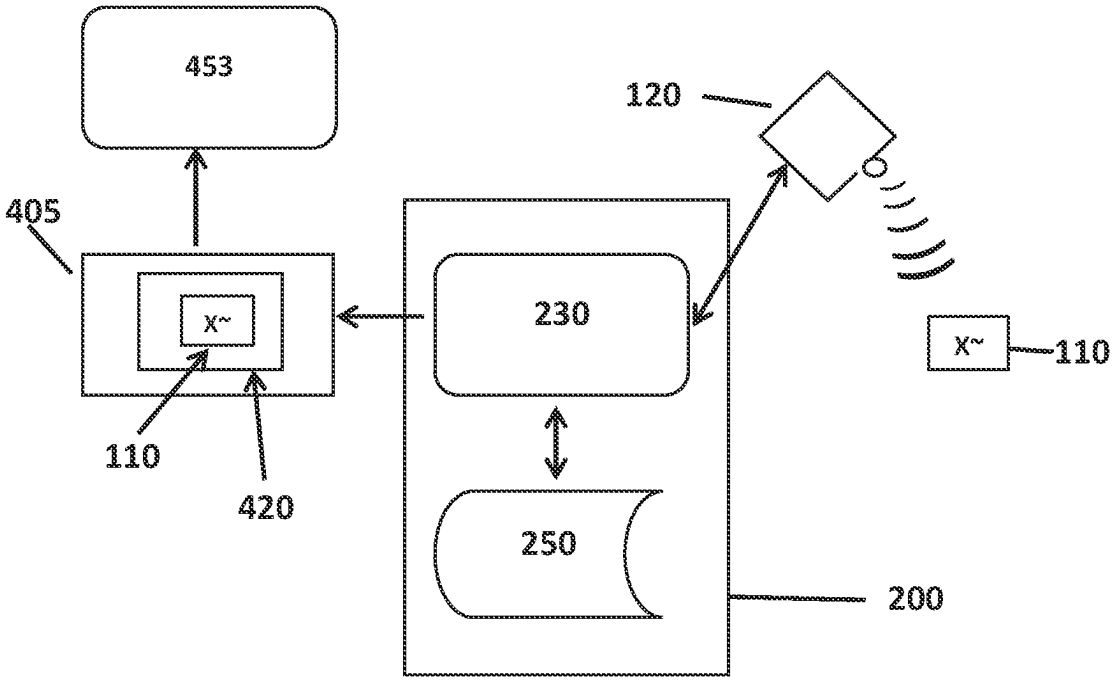

Figure 4

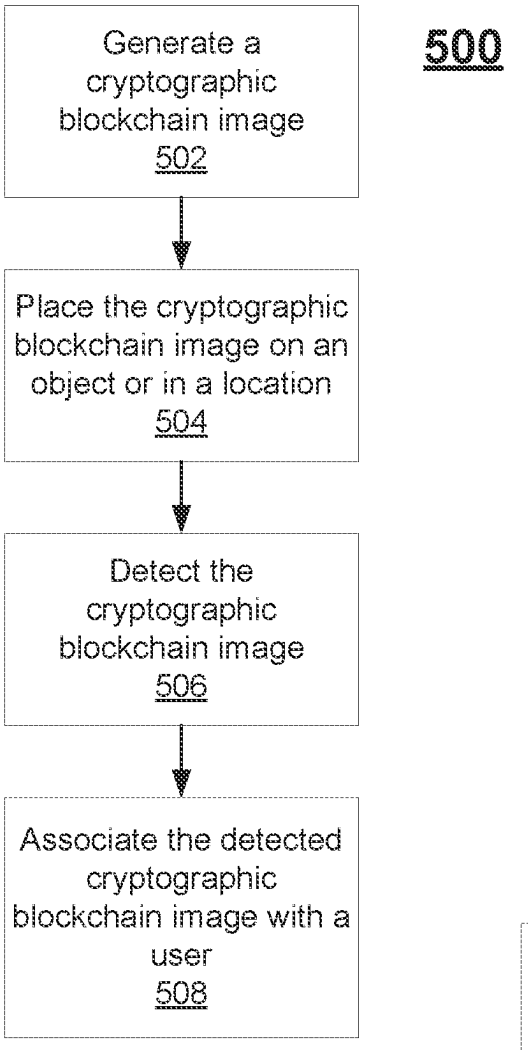

Figure 5

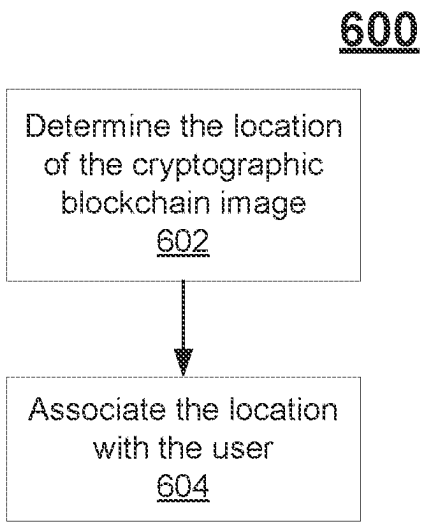

Figure 6

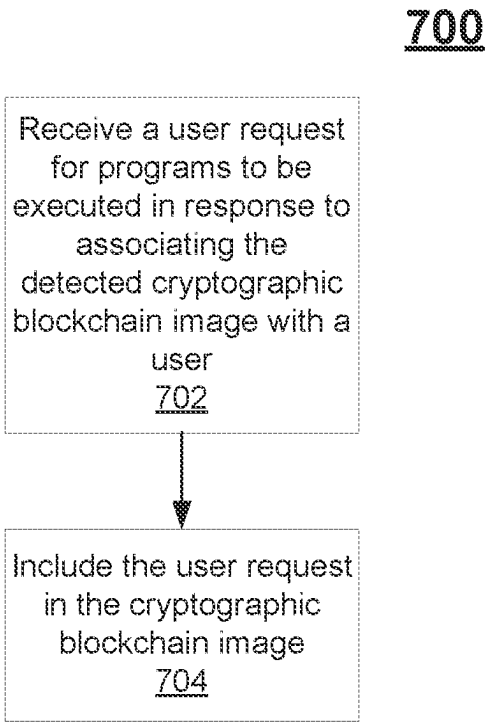

Figure 7

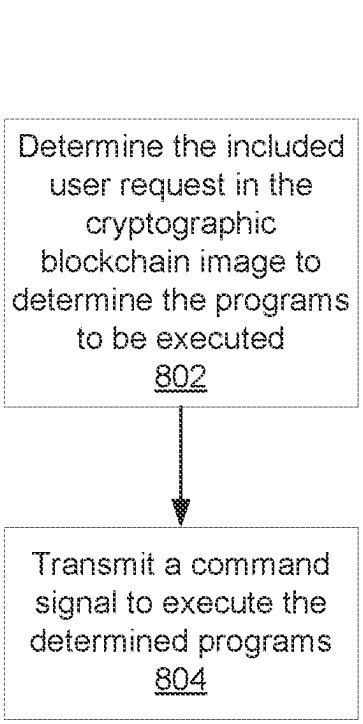

Figure 8

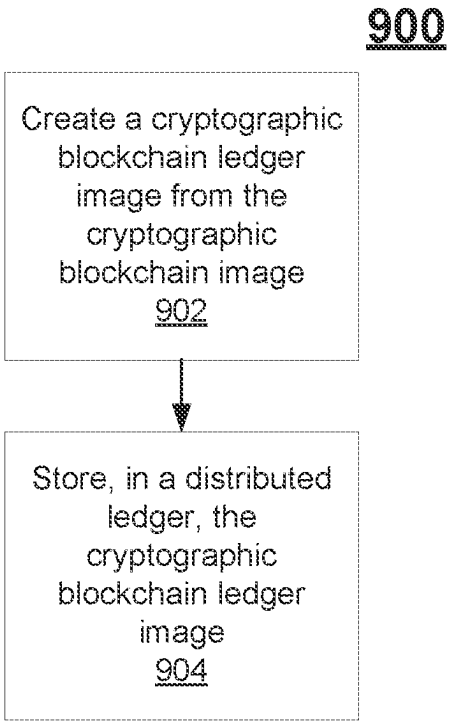

Figure 9

METHODS AND SENSOR ARRAY PLATFORMS FOR CREATING AND MONITORING CRYPTOGRAPHIC BLOCKCHAIN IMAGES AND EXECUTING PROGRAMS BASED ON MONITORED IMAGES

RELATED APPLICATIONS

This application claims the benefit under 35 USC § 119 to U.S. Provisional Patent Application Ser. No. 63/103,828 filed on Aug. 28, 2020, which is incorporated by reference herein in its entirety.

BACKGROUND

The disclosure relates to satellites, drones and other hardware equipped with image/spectra sensors, and, more particularly, communication systems for hardware systems and communications from a distance with users lacking a radio frequency device.

Unless otherwise indicated herein, the approaches described in this section are not admitted to be prior art by inclusion in this section.

Throughout history long distance communication methods have been vital to informing people far away of events that are taking place without direct human contact from messengers. A few examples of these are signal fires, smoke signals, the use of percussion instruments, and mirrors reflecting light to distant observers in a predetermined distinguishable pattern that can be observed and interpreted to communicate a message. Long distance and localized communication methods are still needed in many areas where there are no cellular networks, in large areas of wilderness and over vast areas of the oceans. It is desired to have a communication system to those underserved areas and areas where modern electronic systems may be affected by natural disasters or manmade events. It is also desired to have a communication system that can also be utilized in addition to current communication systems providing additional information and security improving communication.

SUMMARY

The present disclosure provides for methods and sensor array platforms for creating and monitoring cryptographic blockchain images and executing programs based on monitored images and methods therefor. In one embodiment, a method comprises generating a cryptographic blockchain image; placing the cryptographic blockchain image on an object or in a location; detecting the cryptographic blockchain image; and associating the detected cryptographic blockchain image with a user.

In one embodiment, the method further comprises determining the location of the cryptographic blockchain image; and associating the location with the user.

In one embodiment, the method further comprises receiving a user request for programs to be executed in response to associating the detected cryptographic blockchain image with a user; and including the user request in the cryptographic blockchain image.

In one embodiment, associating the detected cryptographic blockchain image with a user includes determining the included user request in the cryptographic blockchain image to determine the programs to be executed; and transmitting a command signal to execute the determined programs.

In one embodiment, the method further comprises receiving another user request for other programs to be executed in response to associating the detected cryptographic blockchain image with a user; and including another user request in the cryptographic blockchain image

In one embodiment, the method further comprises creating a cryptographic blockchain ledger image from the cryptographic blockchain image; and storing, in a distributed ledger, the cryptographic blockchain ledger image.

In one embodiment, the disclosure provides for a system comprising a processor configured to execute computer program instructions and a non-transitory computer-readable storage medium storing computer program instructions executable by the processor to perform actions of the methods herein.

In one embodiment, the disclosure provides for a non-transitory computer-readable storage medium storing computer program instructions executable by a processor to perform actions of the methods herein.

The following detailed description and accompanying drawings provide a better understanding of the nature and advantages of the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

With respect to the discussion to follow and in particular to the drawings, it is stressed that the particulars shown represent examples for purposes of illustrative discussion, and are presented in the cause of providing a description of principles and conceptual aspects of the present disclosure. In this regard, no attempt is made to show implementation details beyond what is needed for a fundamental understanding of the present disclosure. The discussion to follow, in conjunction with the drawings, make apparent to those of skill in the art how embodiments in accordance with the present disclosure may be practiced. In the accompanying drawings:

FIG. **1** illustrates a pictorial diagram of a scalable sensor array platform; utilized by the platform system, which can be established locally, regionally, nationally, internationally or globally according to one embodiment.

FIG. **2** is a block diagram illustrating a platform system for creating and identifying the image according to one embodiment.

FIG. **3** is a block diagram illustrating the platform system of FIG. **2** and the settings that can be used by an account holder for a cryptographic blockchain image associated with the account holder's account according to some embodiments.

FIG. **4** is a block diagram illustrating the platform system of FIG. **2** identifying a cryptographic blockchain image and sending an electronic image of the location of the cryptographic blockchain image according to some embodiments.

FIG. **5** is a flowchart illustrating a process of operations of a cryptographic blockchain image according to one embodiment.

FIG. **6** is a flowchart illustrating a process of operations of locating a cryptographic blockchain image according to one embodiment.

FIG. **7** is a flowchart illustrating a process of creating a cryptographic blockchain image based on a user request according to one embodiment.

FIG. **8** is a flowchart illustrating a process of generating a communication signal based on a cryptographic blockchain image according to one embodiment.

FIG. **9** is a flowchart illustrating a process of creating a cryptographic blockchain ledger image according to one embodiment.

DETAILED DESCRIPTION

In the following description, for purposes of explanation, numerous examples and specific details are set forth in order to provide a thorough understanding of the present disclosure. It will be evident, however, to one skilled in the art that the present disclosure as expressed in the claims may include some or all of the features in these examples, alone or in combination with other features described below, and may further include modifications and equivalents of the features and concepts described herein.

Reference in the specification to "one embodiment", "an embodiment", "various embodiments" or "some embodiments" means that a particular feature, structure, or characteristic described in connection with these embodiments is included in at least one embodiment of the invention, and such references in various places in the specification are not necessarily all referring to the same embodiment.

The disclosure describes a hardware platform that can be comprised of artificial intelligence (AI) cryptographic blockchain communication system programs for the creation, distribution, monitoring for and identification of cryptographic blockchain images.

FIG. **1** illustrates a pictorial diagram of a scalable sensor array platform **100** that can be established locally, regionally, nationally, internationally or globally according to one embodiment. The platform **100** comprises a plurality of sensor platforms **120**. The sensor platforms **120** may include electronic image and/or spectra sensors. The sensor platforms **120** may be mounted on handheld devices, electronic terminals, satellites, drones, aerial vehicles, the earth's surface, and inside or outside manmade structures **165**. The sensor platform **120** is also referred to herein as sensor **120** for convenience.

The programmable cryptographic blockchain image **110** is also referred to herein as image **110** for convenience. The account holder is provided by an AI processor **125** a schedule of optimal viewing by sensors **120** that includes other instructions on how to optimize the search ability of the cryptographic hardware output image **110**.

Images **110** can be positioned, individually or in groups, on the earth's surface **130** and/or on, above, and below surfaces of water bodies **150**. In various embodiments, images **110** are affixed to vehicles, planes, image banners that can be placed, moved, and placed again in a different location, on buildings, tents, temporary shelter structures, lifejackets or other clothing apparel, accessories and as an electronic file to display the image **110** on an electronic display according to some embodiments. The images **110** can be identified and read by any one or a combination of sensors **120**.

The images **110** can be made and comprised of any one or a combination of an account holders individual's design accepted for use in the platform **100**, an electronic projection screen displaying one or a various number of images **110**, spectra sensitive materials woven or printed into or on various materials including, but not limited, to heat producing fibers for thermal detection by sensors **120**, printed on vinyl, stickers, wool or other unique cryptographic patterns designed and produced by the platform **100** of varying shapes and sizes. The images **110** can be formed of spectra sensitive materials identifiable and readable by any one or a combination of the sensors **120**.

The AI system **125** comprises programs that activate a series of executables that can include but not be limited to confirming and positioning the location of images **110** on a map, sending email, text, instruction, inventory number, required or requested action that has been correlated with the image **110** and a file containing these instructions stored in the memory of the platform described below in further detail in conjunction with FIGS. **2** and **3**. In response to the sensor **120** identifying and reading an image **110**, the AI system **125** executes one or more programs. These responses can be preprogrammed by account holders of the platform **100** for each image **110** that is associated with their account and has been detected and read by the sensors **120** which is further described below in conjunction with FIG. **3**. The account holder may change the settings of the account holder to reprogram the response of the AI system **125** based on the changed setting while using the same image **110**. The settings described below in conjunction with FIG. **3** may be done as initial programming or reprogramming by the account holder.

FIG. **2** is a block diagram illustrating a platform system **200** for creating and identifying the image **110** according to one embodiment. The platform system **200** comprises a processor **230** coupled to the sensor **120** and further comprises a memory **250** coupled to the processor **230** coupled to an AI processor **205** coupled to a cryptographic blockchain distributed ledger (DL) **240**. The cryptographic blockchain distributed ledger (DL) is also referred to herein as DL **240** for convenience. The platform system **200** tasks the artificial intelligence (AI) program processor **205** to create, assign, and manage a DL **240** for the images **110**. The processor **230** executes instructions stored in the memory **250** to acquire, detect, identify, and execute the settings saved by the account holder for the image **110** further described below in FIG. **3**.

The platform system **200** can also operate as a standalone system. The platform system **200** may be integrated in the operations of a CPU or other processing hardware as a standalone platform system **200** for private users (e.g., no public access such as for business or government use). In various embodiments, the standalone platform system **200** can be incorporated into but not be limited to one or more of the following: desktop computers, laptops, handheld devices, and Universal Serial Bus (USB) memory sticks, CPUs in home electronics, automobiles, and industrial equipment, and standalone hard drives with independent power supplies and an operating system. Existing or newly created paper documents can be labeled with images **110** in order to rename, organize, and secure them in the platform systems **200** distributed ledger (DL) **240**.

In some embodiments, images **110** are programmed to only function in a designated geographic area. In some embodiments, images **110** can be embedded into hardware and only function with other hardware containing that image **110** or other images **110** designated to operate with a hardware system creating a secure closed network.

The platform processor **230** sends a message to the AI processor **205** to task the AI processor **205** to create an image **110**. The AI processor **205** utilizes an aperiodic or other image data field **225** for the identification and sizing of an area used to create and test against other images **110** to create a new accounts image **110**.

The AI processor **205** creates, indexes, stores, and secures the image **110** in a separate DL **240**. The AI processor **205** accesses the DL **240** in response to a call from the processor **230** for an image **110** to be assigned to a new or existing account. Images **110** are part of the anticipatory data of the

AI processor **205** and works in conjunction with the platform processor **203** on the monitoring and confirmation of the image **110** identified by the sensor **120** according to some embodiments.

The DL **240** is managed by the following process. In one embodiment, the AI processor **205** does not use alpha numeric file names to identify, store, and recall the account holder's data that can include but not be limited to settings, files, and requests for programs to be executed. Instead the AI processor **205** utilizes the same image **110** for an individual account holder's file identification and data storage that has been provided to the account holder by the AI processor **205** for their use outside the platform **100**. The AI processor **205** creates a cryptographic blockchain ledger image (CBLI) **267** out of the individual account holder images **110** when a new account is established or additional images **110** are added to an account. The images **110** serve as the account holder's file identification that is used by the AI processor **205** to organize the storage structure within the cryptographic blockchain ledger image (CBLI) **267**. The cryptographic blockchain ledger image (CBLI) **267** is also referred to herein as CBLI **267** for convenience. The AI processor **205** that created the CBLI **267** also recalls the account holder's data from the CBLI **267** when the sensor **120** has identified the image **110** and has been confirmed by the AI processor **205** and the platform systems **200** processor **230**.

FIG. **3** is a block diagram illustrating a platform system **200** and an account holder settings interface **300** for receiving user settings that can be used by an account holder for an image **110** associated with the account holder's account.

An account holder image **110** settings interface **320** provides settings for scheduling, tasking, geophysical coverage areas, selecting different spectrum types of sensors **120** and creating different image media types (banners, stickers, blankets, electronic file images). These setting selections create pricing offers for the account holder.

An account holder communication interface **330** provides initial platform system **200** communication settings for operations that can include but not be limited to sending the following; when the image **110** is identified by a sensor **120**; an email, text message that are input or electronic images, video files or other electronic files that have been uploaded by the account holder into the memory **250** through the processor **230**.

An account holder payment, deposit and account balance interface **335** provides settings for payment, deposit and account balance operations that can include but not be limited transferring money or crypto currencies when the image **110** is identified by a sensor **120**.

An account holder messaging interface **340** provides message settings and operations described below in conjunction with FIG. **4** when the image **110** is identified by a sensor **120**.

FIG. **4** is a block diagram illustrating the platform system **200** sending a message **405** to an account holder device **453**. The message **405** includes an electronic image **420** of the location of the image **110** identified by the sensor **120**. The electronic image **420** comprises an image **110** and an area around the location of the image **110**. The account holder can set the range of the electronic image **420** established around the image **110** prior to or after the electronic image **420** has been taken and program the image **110** to deliver the electronic image **420**.

FIG. **5** is a flowchart illustrating a process **500** of operations of a cryptographic blockchain image **110** according to one embodiment.

The AI system **120** generates, at **502**, the cryptographic blockchain image **110**, for example, in a manner as described above. Placing, at **504**, the cryptographic blockchain image **110** on an object (e.g., manmade structure **165**) or in a location (e.g., surface **130** or water body **150**). The sensor platform **120** detects, at **506**, the cryptographic blockchain image **110**. The AI system **125** associates, at **508**, the detected cryptographic blockchain image **110** with a user.

FIG. **6** is a flowchart illustrating a process **600** of operations of locating the cryptographic blockchain image **110** according to one embodiment.

The sensor platform **120** determines, at **602**, the location of the cryptographic blockchain image. The AI system **125** associates, at **604**, the location with the user.

FIG. **7** is a flowchart illustrating a process **700** of creating a cryptographic blockchain image **110** based on a user request according to one embodiment.

The AI system **125** receives, at **702**, a user request for programs to be executed in response to associating the detected cryptographic blockchain image **110** with a user. The AI system **125** includes, at **704**, the user request in the cryptographic blockchain image **110**.

FIG. **8** is a flowchart illustrating a process **800** of generating a communication signal based on a cryptographic blockchain image **110** according to one embodiment.

The association at **508** may include the AI system **125** determining, at **802**, the included user request in the cryptographic blockchain image **110** to determine the programs to be executed. The AI system **125** transmits, at **804**, a command signal to execute the determined programs.

FIG. **9** is a flowchart illustrating a process **900** of creating a cryptographic blockchain ledger image **267** according to one embodiment.

The AI system **125** creates, at **902**, a cryptographic blockchain ledger image **267** from the cryptographic blockchain image **110**. The AI system **125** stores, at **904**, in a distributed ledger **240**, the cryptographic blockchain ledger image **110**.

Some portions of the detailed description above are presented in terms of algorithms and symbolic representations of operations on data bits within a computer memory. These algorithmic descriptions and representations are the means used by those skilled in the data processing arts to most effectively convey the substance of their work to others skilled in the art. An algorithm is here, and generally, conceived to be a self-consistent sequence of steps (instructions) leading to a desired result. The steps are those requiring physical manipulations of physical quantities. Usually, though not necessarily, these quantities take the form of electrical, magnetic or optical signals capable of being stored, transferred, combined, compared and otherwise manipulated. It is convenient at times, principally for reasons of common usage, to refer to these signals as bits, values, elements, symbols, characters, terms, numbers, or the like. Furthermore, it is also convenient at times, to refer to certain arrangements of steps requiring physical manipulations of physical quantities as modules or code devices, without loss of generality.

However, all of these and similar terms are to be associated with the appropriate physical quantities and are merely convenient labels applied to these quantities. Unless specifically stated otherwise as apparent from the following discussion, it is appreciated that throughout the description, discussions utilizing terms such as "processing" or "computing" or "calculating" or "determining" or "displaying" or the like, refer to the action and processes of a computer system, or similar electronic computing device, that manipu-

lates and transforms data represented as physical (electronic) quantities within the computer system memories or registers or other such information storage, transmission or display devices.

Certain aspects of the present invention include process steps and instructions described herein in the form of an algorithm. It should be noted that the process steps and instructions of the present invention could be embodied in software, firmware or hardware, and when embodied in software, could be downloaded to reside on and be operated from different platforms used by a variety of operating systems.

The present invention also relates to an apparatus for performing the operations herein. This apparatus may be specially constructed for the required purposes, or it may comprise a general-purpose computer selectively activated or reconfigured by a computer program stored in the computer. Such a computer program may be stored in a computer readable storage medium of any type of media suitable for storing electronic instructions, and each coupled to a computer system bus. Furthermore, the computers referred to in the specification may include a single processor or may be architectures employing multiple processor designs for increased computing capability.

The algorithms and displays presented herein are not inherently related to any particular computer or other apparatus. Various general-purpose systems may also be used with programs in accordance with the teachings herein, or it may prove convenient to construct more specialized apparatus to perform the required method steps. The required structure for a variety of these systems will appear from the description below. In addition, the present invention is not described with reference to any particular programming language. It will be appreciated that a variety of programming languages may be used to implement the teachings of the present invention as described herein, and any references below to specific languages are provided for disclosure of enablement and best mode of the present invention.

The above description illustrates various embodiments of the present disclosure along with examples of how aspects of the particular embodiments may be implemented. The above examples should not be deemed to be the only embodiments, and are presented to illustrate the flexibility and advantages of the particular embodiments as defined by the following claims. Based on the above disclosure and the following claims, other arrangements, embodiments, implementations and equivalents may be employed without departing from the scope of the present disclosure as defined by the claims.

What is claimed is:

1. A method comprising:

generating a programmable cryptographic blockchain image in response to a user selected image;

associating the generated programmable cryptographic blockchain image with a user;

detecting the programmable cryptographic blockchain image that is located on an object; and

determining the user that is associated with the detected programmable cryptographic blockchain image.

2. The method of claim **1**, further comprising:

determining the location of the detected programmable cryptographic blockchain image that is located on the object; and

associating the determined location of the object with the user.

3. The method of claim **1**, further comprising:

receiving a user request for programs to be executed in response to determining the user that is associated with the detected programmable cryptographic blockchain image; and

including the user request in the generated programmable cryptographic blockchain image.

4. The method of claim **3**, wherein determining the user that is associated with the detected programmable cryptographic blockchain image includes:

determining the included user request in the detected programmable cryptographic blockchain image to determine the programs to be executed; and

transmitting a command signal to execute the determined programs.

5. The method of claim **3**, further comprising:

receiving another user request for other programs to be executed in response to determining the user that is associated with the detected programmable cryptographic blockchain image; and

including another user request in the generated programmable cryptographic blockchain image.

6. The method of claim **1**, further comprising:

creating a cryptographic blockchain ledger image from the generated programmable cryptographic blockchain image; and

storing, in a distributed ledger, the created cryptographic blockchain ledger image.

7. The method of claim **6**, further comprising:

using the created cryptographic blockchain ledger image as a file identifier.

8. A system comprising: a processor configured to execute computer program instructions and a non-transitory computer-readable storage medium storing computer program instructions executable by the processor to perform actions comprising:

generating a programmable cryptographic blockchain image in response to a user selected image;

associating the generated programmable cryptographic blockchain image with a user;

detecting the programmable cryptographic blockchain image that is located on an object; and

determining the user that is associated with the detected programmable cryptographic blockchain image.

9. The system of claim **8** wherein the instructions further cause the actions of:

determining the location of the detected programmable cryptographic blockchain image that is located on the object; and

associating the determined location of the object with the user.

10. The system of claim **8**, wherein the instructions further cause the actions of:

receiving a user request for programs to be executed in response to determining the user that is associated with the detected programmable cryptographic blockchain image; and

including the user request in the generated programmable cryptographic blockchain image.

11. The system of claim **10**, wherein the instructions further cause the actions of:

determining the included user request in the detected programmable cryptographic blockchain image to determine the programs to be executed; and

transmitting a command signal to execute the determined programs.

12. The system of claim 10, wherein the instructions further cause the actions of:

receiving another user request for other programs to be executed in response to determining the user that is associated with the detected programmable cryptographic blockchain image; and

including another user request in the generated programmable cryptographic blockchain image.

13. The system of claim 8, wherein the instructions further cause the actions of:

creating a cryptographic blockchain ledger image from the generated programmable cryptographic blockchain image; and

storing, in a distributed ledger, the created cryptographic blockchain ledger image.

14. A non-transitory computer-readable storage medium storing computer program instructions executable by a processor to perform actions comprising:

generating a programmable cryptographic blockchain image in response to a user selected image;

associating the generated programmable cryptographic blockchain image with a user;

detecting the programmable cryptographic blockchain image that is located on an object; and

determining the user that is associated with the detected programmable cryptographic blockchain image.

15. The non-transitory computer-readable storage medium of claim 14 wherein the instructions further cause the actions of:

determining the location of the detected programmable cryptographic blockchain image that is located on the object; and

associating the determined location of the object with the user.

16. The non-transitory computer-readable storage medium of claim 15, wherein the instructions further cause the actions of:

receiving another user request for other programs to be executed in response to determining the user that is associated with the detected programmable cryptographic blockchain image; and

including another user request in the generated programmable cryptographic blockchain image.

17. The non-transitory computer-readable storage medium of claim 14, wherein the instructions further cause the actions of:

receiving a user request for programs to be executed in response to determining the user that is associated with the detected programmable cryptographic blockchain image; and

including the user request in the generated programmable cryptographic blockchain image.

18. The non-transitory computer-readable storage medium of claim 17, wherein the instructions further cause the actions of:

determining the included user request in the detected programmable cryptographic blockchain image to determine the programs to be executed; and

transmitting a command signal to execute the determined programs.

19. The non-transitory computer-readable storage medium of claim 14, wherein the instructions further cause the actions of:

creating a cryptographic blockchain ledger image from the generated programmable cryptographic blockchain image; and

storing, in a distributed ledger, the created cryptographic blockchain ledger image.

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