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Inventor(s)	Akisada; Yukiyo et al.

Apparatus, system, method, and non-transitory computer-readable medium for acquiring measurement data related to a target device that a user is looking at

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Abstract

There is provided an apparatus including a storage unit configured to store, in association with each of a plurality of devices existing in a plant, a storage address of measurement data which is related; a detection unit configured to detect, among the plurality of devices, a target device that a user is looking at; an acquisition unit configured to acquire, from the storage address associated with the target device, measurement data related to the target device; and a display unit configured to display a content acquired by the acquisition unit.

Inventors:	**Akisada; Yukiyo (Tokyo, JP), Sakurai; Yasuki (Tokyo, JP)**
Applicant:	**Yokogawa Electric Corporation** (Tokyo, JP)
Family ID:	**1000008751026**
Assignee:	**Yokogawa Electric Corporation (Tokyo, JP)**
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Primary Examiner: Lee; Paul D

Background/Summary

BACKGROUND
1. Technical Field

(1) The present invention relates to an apparatus, a system, a method, and a computer-readable medium.

2. Related Art

(2) Patent Document 1 discloses that "a line of sight of a user is detected to control information communication with another communication device".

(3) Patent Document 1: Japanese Patent Application Publication No. 2016-177565

GENERAL DISCLOSURE

(4) A first aspect of the present invention provides an apparatus. The apparatus may include a storage unit configured to store, in association with each of a plurality of devices existing in a plant, a storage address of measurement data which is related. The apparatus may include a detection unit configured to detect, among the plurality of devices, a target device that a user is looking at. The apparatus may include an acquisition unit configured to acquire, from the storage address associated with the target device, measurement data related to the target device. The apparatus may include a display unit configured to display a content acquired by the acquisition unit.

(5) A second aspect of the present invention provides a system. The system may include the apparatus according to the first aspect. The system may include at least one storage device configured to store, in association with each of at least some devices among the plurality of devices, measurement data related to the each of the at least some devices.

(6) A third aspect of the present invention provides a method. The method may include storing, in association with each of a plurality of devices existing in a plant, a storage address of measurement data which is related. The method may include detecting, among the plurality of devices, a target device that a user is looking at. The method may include acquiring, from the storage address associated with the target device, measurement data related to the target device. The method may include displaying a content acquired by the acquiring.

(7) A fourth aspect of the present invention provides a computer-readable medium having recorded thereon a program. The program may cause a computer to function as a storage unit configured to store, in association with each of a plurality of devices existing in a plant, a storage address of measurement data which is related. The program may cause the computer to function as a detection unit configured to detect, among the plurality of devices, a target device that a user is looking at. The program may cause the computer to function as an acquisition unit configured to acquire, from the storage address associated with the target device, measurement data related to the target device. The program may cause the computer to function as a display unit configured to display a content acquired by the acquisition unit.

(8) The summary clause does not necessarily describe all necessary features of the embodiments of the present invention. The present invention may also be a sub-combination of the features described above.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

(1) FIG. **1** shows a maintenance and management system **1** according to the present embodiment.

(2) FIG. **2** shows a watching terminal **13**.

(3) FIG. **3** shows an appearance of the watching terminal **13**.

(4) FIG. **4** shows an operation of the watching terminal **13**.

(5) FIG. **5** shows an example of a computer **2200** in which a plurality of aspects of the present invention may be entirely or partially embodied.

DESCRIPTION OF EXEMPLARY EMBODIMENTS

(6) Hereinafter, the invention will be described through embodiments of the invention, but the

following embodiments do not limit the invention according to claims. In addition, not all of the combinations of features described in the embodiments are essential to the solving means of the invention.

1. Configuration of Maintenance and Management System **1**

(7) FIG. **1** shows a maintenance and management system **1** according to the present embodiment. The maintenance and management system **1** performs maintenance and management of a plant, and includes a plurality of devices **11**, a maintenance terminal **12**, a watching terminal **13**, one or more wireless communication devices **14**, and an operation control apparatus **15**, an interface apparatus **16**, a resource management apparatus **17**, one or more document databases **18**, and a maintenance and management apparatus **19**.

(8) Here, examples of the plant include: in addition to an industrial plant such as a chemical plant, a plant for managing and controlling a well site such as a gas field or an oil field and its surrounding area; a plant for managing and controlling power generation such as hydroelectric, thermal, or nuclear power generation; a plant for managing and controlling energy harvesting from solar power, wind power, or the like; a plant for managing and controlling water and sewerage, dams, or the like; and others. Each device **11**, the maintenance terminal **12**, a watching terminal **13**, and the wireless communication device **14** may be arranged at a field site where a process is executed in the plant. For example, at the field site, there exist a pipe through which a fluid to be measured is caused to flow, a flow meter which is installed in the pipe to measure a flow rate of the fluid, and the like. In addition, the operation control apparatus **15**, the interface apparatus **16**, and the resource management apparatus **17** may be arranged in a management room, an instrument room, or the like in the plant. The document database **18** may be arranged outside the plant. The maintenance and management apparatus **19** may be arranged in the management room, the instrument room, or the like in the plant, or may be arranged outside the plant.

1-1. Device **11**

(9) Each of the plurality of devices **11** is a tool, a machine, or an apparatus, and for example, may be: a sensor that measures a physical quantity such as a pressure, a temperature, a pH, a speed, and a flow rate in the process in the plant; may be an actuator such as a valve which controls any of physical quantities, a flow control valve, an opening and closing valve, a pump, a fan, a motor, a heating apparatus, or a cooling apparatus; may be an acoustic device such as a microphone or a speaker that collects an abnormal noise or the like in the plant or emits a warning sound or the like; may be a location detection device that outputs location information of each device; may be a pipe through which a fluid is caused to flow; or may be another device. Each device **11** among the plurality of devices **11** may be a different type, or two or more of at least some devices **11** may be the same type.

(10) Each device **11** may be connected to the operation control apparatus **15** via a control network **100** in a wired or wireless manner. A communication in the control network **100** may a be digital communication, may be a hybrid communication in which a digital signal is superimposed on an analog signal (a signal at 4 to 20 mA or the like), or may be at a speed of approximately 1000 bps to 10000 bps (as an example, 1200 bps, 2400 bps). The communication in the control network **100** may be performed, for example, by a wireless communication protocol of ISA (International Society of Automation), and may be performed, as an example, by ISA100, HART (Highway Addressable Remote Transducer) (registered trademark), BRAIN (registered trademark), FOUNDATION Fieldbus, PROFIBUS, or the like.

(11) In addition, at least some devices **11** may wirelessly communicate with at least one of the wireless communication device **14** or the watching terminal **13** in accordance with a standard of IEEE802.11 (so-called Wifi (registered trademark)) or a standard of IEEE802.15.1 (so-called Bluetooth (registered trademark)).

(12) Each device **11** may have specific identification information (also referred to as device specific information). The device specific information is information for uniquely identifying the device,

and may be, as an example in the present embodiment, at least one of a serial number assigned to the device **11** by a communication protocol (the HART as an example), a serial number set by a manufacturer of the device **11**, or a device ID.

(13) In addition, in the one or more devices **11**, a value of at least one parameter (also referred to as a value of a configuration parameter) may be able to be set. The configuration parameter may be any parameter. As an example, the configuration parameter may be an adjustment amount for performing a zero point adjustment, may indicate a time constant, may indicate whether an initialization is necessary or unnecessary, may indicate a test condition, or may indicate the identification information or a tag name of the device **11**. The value of the configuration parameter may be stored in an internal storage device (not shown) of the device **11**.

(14) In addition, at least some devices **11** may each store measurement data related to the at least some devices **11** in the internal storage device.

1-1.1. Measurement Data

Measurement Data (1)

(15) A plurality of pieces of measurement data related to the plurality of devices **11** may include the measurement data obtained by the sensor as the device **11**.

(16) For example, when the device **11** is the sensor that measures the physical quantity such as a pressure, a temperature, a pH, a speed, and a flow rate, the measurement data may be data indicating these physical quantities.

Measurement Data (2)

(17) The plurality of pieces of measurement data related to the plurality of devices **11** may include the measurement data obtained by the sensor that is provided in the device **11**, or the sensor that is provided in an accessory of the device **11**.

(18) For example, when the device **11** is the actuator, and sensors are provided in the device **11** itself or the accessory of the device **11**, the measurement data may be data measured by these sensors. As an example, when the device **11** is the actuator of a valve, a flow control valve, an opening and closing valve, a pump, a fan, a motor, or the like, the measurement data may be data indicating the physical quantity such as a speed, a flow rate, a pressure, a temperature, and a pH of a fluid which are controlled by the device **11**. When the device **11** is the actuator of a heating apparatus, a cooling apparatus, or the like, the measurement data may be data indicating the physical quantity such as a temperature of a target which is heated or cooled by the device **11**.

(19) In addition, when the device **11** is the pipe, and sensors are provided in the device **11** itself or the accessory of the device **11**, the measurement data may be data measured by these sensors. As an example, the measurement data may be data indicating the physical quantity such as a speed, a flow rate, a pressure, a temperature, and a pH of the fluid flowing through the pipe as the device **11**.

(20) It should be noted that as the sensor provided in the device **11**, or the sensor provided in the accessory of the device **11**, the sensor itself may be the device **11**. In this case, the measurement data obtained by the sensor is measurement data related to the device **11** as the sensor, or may be measurement data related to the device **11** provided with the sensor (or the device **11** provided with the sensor in the accessory).

(21) In addition, the accessory of the device **11** may be an article with a body different from a main body of the device **11**. For example, the accessory of the device **11** may be a pipe provided with the device **11**, a wall into which the device **11** is fitted, a cover of the device **11**, or the like.

Measurement Data (3)

(22) The plurality of pieces of measurement data related to the plurality of devices **11** may include the measurement data obtained by the sensor which is provided in an accessory on an upstream side or a downstream side with respect to the pipe as the device **11**. The accessory on the upstream side or the downstream side with respect to the pipe may be the pipe on the upstream side or the downstream side from the pipe, or may be the actuator of a flow control valve, an opening and closing valve, a pump, a fan, a motor, or the like, which is provided on the upstream side or the

downstream side from the pipe. As an example, the measurement data may be data indicating the physical quantity such as a speed, a flow rate, a pressure, a temperature, and a pH of the fluid on the upstream side or the downstream side from the pipe as the device **11**.

1-2. Maintenance Terminal **12**

(23) The maintenance terminal **12** accesses the configuration parameter of device **11** to refer to, set, and change the value of the configuration parameter, or the like. The maintenance terminal **12** may be a handheld terminal (HHT) (as an example, a smartphone or a tablet PC) carried by a field site worker, or may be a stationary PC. When the maintenance terminal **12** is a handheld terminal, the maintenance terminal **12** may be detachably connected to the device **11**. It should be noted that in addition to the configuration parameter being changed by using the maintenance terminal **12**, the device **11** may be attached to and detached from the control network **100** by a field site worker, and an operation may also be stopped for maintenance.

1-3. Watching Terminal **13**

(24) The watching terminal **13** is an example of the apparatus, and is carried by a user (a watcher as an example) who watches an inside of the plant.

(25) The watching terminal **13** may wirelessly communicate with the one or more devices **11**. In addition to or instead of this, the watching terminal **13** may wirelessly communicate, via the wireless communication device **14**, with at least one of the one or more devices **11**, the operation control apparatus **15**, the interface apparatus **16**, or the resource management apparatus **17**. The wireless communication by the watching terminal **13** may be in accordance with at least one standard of the Wifi (registered trademark) or the Bluetooth (registered trademark).

(26) The watching terminal **13** may display information related to the device **11**. It should be noted that the details of the watching terminal **13** will be described below.

1-4. Wireless Communication Device **14**

(27) Each wireless communication device **14** is provided outside the watching terminal **13** to wirelessly communicate with the watching terminal **13**. Each wireless communication device **14** may communicate, in a wired or wireless manner, with at least one of the one or more devices **11**, the operation control apparatus **15**, the interface apparatus **16**, or the resource management apparatus **17**. For example, the wireless communication device **14** may communicate, via a network **101**, with the operation control apparatus **15**, the interface apparatus **16**, or the resource management apparatus **17**.

1-5. Operation Control Apparatus **15**

(28) The operation control apparatus **15** communicates with each device **11** to control the process. For example, the operation control apparatus **15** acquires a process value, which is measurement data, from the device **11** which is the sensor, and drives the device **11** which is the actuator. The operation control apparatus **15** may be an example of the storage device, and may store, in association with at least some devices **11**, the measurement data related to the at least some devices **11**. Then, the operation control apparatus **15** may supply the process value to the interface apparatus **16**, and receive a target value of the process value from the interface apparatus **16**. It should be noted that as an example, in the present embodiment, a description is made that the maintenance and management system **1** is provided with one operation control apparatus **15** to control all of the devices **11**; however, a plurality of operation control apparatuses **15** may be provided to respectively perform distributed controls on some of the devices **11**. The operation control apparatus **15** may be an FCS (Field Control Station) as an example.

1-6. Interface Apparatus **16**

(29) The interface apparatus **16** interfaces between a manager and the plant. The interface apparatus **16** may control the process of the plant via the operation control apparatus **15** according to the operation by the manager. For example, the interface apparatus **16** may receive the process value from the operation control apparatus **15**, and supply the target value of the process value to the operation control apparatus **15**. In addition, the interface apparatus **16** may change the value of the

configuration parameter of the device **11** via the operation control apparatus **15**. The interface apparatus **16** may be an example of the storage device, and may store, in association with at least some devices **11**, the measurement data related to the at least some devices **11**. In addition, the interface apparatus **16** may store, in association with at least some devices **11**, the value of the configuration parameter of each of the at least some devices **11**. The interface apparatus **16** may be a HIS (Human Interface Station) as an example, or may be constituted by a PC or the like.

1-7. Resource Management Apparatus **17**

(30) The resource management apparatus **17** performs online monitoring and centralized management of the plant. For example, the resource management apparatus **17** may manage information or the like (as an example, the value of the configuration parameter or the process value) of the device **11**, which is acquired by the operation control apparatus **15**. The resource management apparatus **17** may be an example of the storage device, and may store, in association with at least some devices **11**, the measurement data related to the at least some devices **11**. In addition, the resource management apparatus **17** may store, in association with at least some devices **11**, the value of the configuration parameter of each of the at least some devices **11**. The resource management apparatus **17** may be, as an example, constituted by a PC or the like.

1-8. Document Database **18**

(31) Each document database **18** stores a model name of the device **11** and a digitized document related to the device **11** in association with each other. The document may be a text file of a specification sheet, a manual, an inspection report, or the like of the device **11**, or may be an image file. The document database **18** may be installed by the manufacturer of the device **11** as an example. It should be noted that the document database **18** and the maintenance and management apparatus **19** may be connected to the resource management apparatus **17** or the like via the network **101** (as an example, the Internet or a dedicated line).

1-9. Maintenance and Management Apparatus **19**

(32) The maintenance and management apparatus **19** supports maintenance and management of equipment. The maintenance and management apparatus **19** may have a device ledger **1900** that stores at least the device specific information and the value of the configuration parameter for each of the plurality of devices **11**. The device ledger **1900** may include a relationship diagram showing, for each device **11** existing in the plant, a relationship between the device **11** and another device **11**.

(33) The relationship diagram may be a piping diagram, or may be a design diagram of the plant. Note that the relationship diagram may be any other diagram.

(34) As an example, the maintenance and management apparatus **19** may be a Device Lifecycle Manager, may be realized by cloud computing, or may be realized by a physical server or a PC. The maintenance and management apparatus **19** may be connected to the resource management apparatus **17** or the like via the network **101** in a wired or wireless manner.

2. Watching Terminal **13**

(35) FIG. **2** shows a watching terminal **13**. The watching terminal **13** has a storage unit **130**, a detection unit **131**, an acquisition unit **132**, and a display unit **133**.

2.1. Storage Unit **130**

(36) The storage unit **130** is configured to store, in association with each of the plurality of devices **11** existing in the plant, a storage address of the measurement data which is related or the like. In the present embodiment, as an example, the storage unit **130** may store the storage address in association with the device specific information of the device **11**.

(37) The storage unit **130** may respectively store, in association with each of the at least one device **11** among the plurality of devices **11** existing in the plant, storage addresses of a plurality of types of measurement data. For example, when a plurality of sensors are provided in at least one of the device **11** or the accessory thereof, the storage unit **130** may store, in association with the device **11**, each of the storage addresses of the measurement data obtained by the plurality of sensors. The plurality of types of measurement data may be measurement data obtained by the sensors different

from each other, may be data indicating types of physical quantities different from each other among the physical quantities such as a speed, a flow rate, a pressure, a temperature, and a pH, or may be data indicating the same type of physical quantities at measurement locations different from each other.

(38) Here, the measurement data related to at least some devices **11** among the plurality of devices **11** existing in the plant may be stored in an external storage device of the at least some devices **11** (in the present embodiment, as an example, the operation control apparatus **15**, the interface apparatus **16**, or the resource management apparatus **17**). In this case, the storage unit **130** may store, in association with each of these at least some devices **11**, an address which is in the external storage device of the device **11**, as the storage address of the measurement data. In addition, when the measurement data is stored in the external storage device of the device **11**, the measurement data related to the two or more devices **11** may be stored in a single external storage device of the device **11**. In this case, the storage unit **130** may respectively store, in association with each of the two or more devices **11**, addresses which are in the storage device and different from each other, as the storage addresses of the measurement data.

(39) In addition, the measurement data related to at least some other devices **11** among the plurality of devices **11** existing in the plant may be stored in the internal storage device of each of the at least some other devices **11**. In this case, the storage unit **130** may store, in association with each of these at least some other devices **11**, the address which is in the internal storage device of each of the at least some other devices **11**, as the storage address of the measurement data. The device **11** in which the measurement data is stored in the internal storage device may be the device **11** different from the above-mentioned device **11** in which the measurement data is stored in the external storage device.

(40) It should be noted that when the plurality of types of measurement data are stored for the device **11**, each of these plurality of types of measurement data may be stored in the internal storage device of the device **11**, or may be stored in the external storage device of the device **11**. Instead of this, among the plurality of types of measurement data, some types of measurement data may be stored in the internal storage device of the device **11**, and remaining types of measurement data may be stored in the external storage device of the device **11**. In this case, the storage unit **130** may store, in association with the device **11**, each of the address which is in the internal storage device of the device **11**, and the address which is in the external storage device of the device **11**, as the storage addresses of the measurement data.

2.1.1. Storage Other than Measurement Data

(41) The storage unit **130** may further store, in association with each of the one or more devices **11** in which the value of the configuration parameter is able to be set, the storage address of the value of the configuration parameter of each of the one or more devices **11**. The storage address of the configuration parameter may be the same as or different from the storage address of the measurement data.

(42) The storage unit **130** may store, as the storage address of the configuration parameter, the address which is in the internal storage device of the device **11**, or may store, as the storage address of the configuration parameter, the address which is in the external storage device of the device **11**. The external storage device of the device **11** may be the maintenance and management apparatus **19**, may be the maintenance terminal **12**, or may be the resource management apparatus **17**. When the operation control apparatus **15** or the interface apparatus **16** stores the value of the configuration parameter, the external storage device of the device **11** may be these apparatuses.

(43) The storage unit **130** may further store the storage address of the relationship diagram (for example, the piping diagram or the design diagram) showing, for each device **11** existing in the plant, the relationship between the device **11** and the other device **11**. In the present embodiment, as an example, the storage unit **130** may store, as the storage address of the relationship diagram, the address which is in the maintenance and management apparatus **19**.

2.2. Detection Unit **131**

(44) The detection unit **131** is configured to detect, among the plurality of devices **11**, the target device **11** that the user is looking at.

(45) The detection unit **131** may have one or more sensors **1310**. For example, the detection unit **131** may have at least one of a six axis sensor, a magnetic sensor, or a positioning sensor as the one or more sensors **1310**.

(46) The six axis sensor may be a motion sensor (also referred to as an inertial sensor) having a three axis acceleration sensor and a three axis gyro (angular velocity) sensor, and may detect a movement of a head of the user, and further an orientation of the watching terminal **13**. The magnetic sensor may be, for example, a three axis geomagnetic sensor. The positioning sensor may receive a wireless signal which is transmitted from a GPS satellite, and detect coordinates of a current location of the watching terminal **13**.

(47) The detection unit **131** may detect a location of the user in the plant, and a line of sight or a point of gaze (also referred to as a position of gaze) of both eyes based on signals from these sensors. The line of sight of the user may be a straight line connecting a midpoint of both eyes, and the point of gaze of the user.

(48) The detection unit **131** may detect the target device **11** by referring to a database (not shown) in which the location coordinates of each device **11** in the plant are registered in advance. For example, the detection unit **131** may refer to the database and detect, as the target device **11**, the device **11** located on the line of sight starting from the location of the user, or may detect, as the target device **11**, the device **11** located at the point of gaze of both eyes of the user. The detection unit **131** may supply the device specific information of the detected target device **11** to the acquisition unit **132**.

(49) It should be noted that the database may be provided in the watching terminal **13**, or may be externally connected to the watching terminal **13**. In addition, the detection unit **131** may further have a distance measuring sensor that measures a distance from the watching terminal **13** to an object in front (the device **11** as an example). In this case, the detection unit **131** may further use a signal from the distance measuring sensor to detect the point of gaze of the user.

(50) In addition, the detection unit **131** may have a camera for capturing an image of an eyeball of the user. In this case, the detection unit **131** may specify a distance from the watching terminal **13** to the point of gaze of the user by using a convergence angle which is calculated from orientations of left and right eyeballs. When the detection unit **131** is provided with the camera for capturing the image of the eyeball, the detection unit **131** may detect the line of sight by analyzing the image of the eyeball without using the six axis sensor.

2.3. Acquisition Unit **132**

(51) The acquisition unit **132** is configured to acquire, from the storage address associated with the target device **11**, the measurement data related to the target device **11**. The acquisition unit **132** may further acquire, from the storage address associated with the target device **11**, the value of the configuration parameter of the target device **11**. The acquisition unit **132** may further acquire the relationship diagram from the storage address of the relationship diagram associated with the target device **11**. The acquisition unit **132** may supply the acquired measurement data or the like to the display unit **133**.

(52) The acquisition unit **132** may detect one or more storage addresses associated with the device specific information of the target device **11** with reference to the storage unit **130**. The acquisition unit **132** may acquire the measurement data, the value of the configuration parameter, or the relationship diagram by the wireless communication from the internal storage device of the target device **11** corresponding to the storage address, or the external storage device (in the present embodiment, as an example, the operation control apparatus **15**, the interface apparatus **16**, the resource management apparatus **17**, the maintenance and management apparatus **19**, the maintenance terminal **12**, or the like).

(53) The acquisition unit **132** may indirectly access the target device **11** corresponding to the storage address, or the external storage device of the target device **11** via a communication device or the like. For example, by wirelessly communicating with the wireless communication device **14** externally connected to the target device **11**, or the wireless communication device **14** externally connected to the external storage device of the target device **11**, the acquisition unit **132** may indirectly access the target device **11**, or the external storage device of the target device **11** via the wireless communication device **14**.

(54) In this case, the acquisition unit **132** may acquire the measurement data from two or more storage devices (in the present embodiment, as an example, the internal storage device of the device **11**, or the external storage device of the device **11**) via one wireless communication device **14**. As an example, the acquisition unit **132** may acquire the plurality of types of measurement data related to one target device **11** from two or more storage devices via one wireless communication device **14**, or may acquire the plurality of pieces of measurement data of the same type or different types in relation to the plurality of target devices **11**.

(55) In addition, by wirelessly communicating with a communication unit built in the target device **11**, or a communication unit built in the external storage device of the target device **11**, the acquisition unit **132** may directly access the target device **11**, or the external storage device of the target device **11**. As an example, when the storage address associated with the target device **11** is not an address which is able to be accessed from the wireless communication device **14**, the acquisition unit **132** may directly access the target device **11** corresponding to the storage address, or the external storage device of the target device **11**. As an example, in this case, the acquisition unit **132** may perform the wireless communication in accordance with the standard of the Bluetooth (registered trademark). It should be noted that when the acquisition unit **132** and the external storage device of the target device **11** directly communicate wirelessly, the storage device may be arranged at the field site where the process is executed in the plant.

2.4. Display Unit **133**

(56) The display unit **133** is configured to display a content acquired by the acquisition unit **132**. For example, the display unit **133** may display the measurement data acquired by the acquisition unit **132**. In addition, the display unit **133** may display the value of the configuration parameter of the target device **11**, or the relationship diagram.

(57) With the above-mentioned watching terminal **13**, when the target device **11** that is looked at by the user is detected among the plurality of devices **11** existing in the plant, the measurement data related to the target device **11** is acquired from the storage address associated with the target device **11**, and is displayed. Accordingly, it is possible to check the measurement data related to the device **11** only by looking at the device **11** in the plant.

(58) In addition, the storage addresses of the plurality of types of measurement data are respectively stored in association with each of at least some devices **11** among the plurality of devices **11**, and thus when the target device **11** looked at by the user is detected, the plurality of types of measurement data related to the target device **11** are acquired from the storage addresses and displayed. Accordingly, it is possible to check each of the plurality of types of measurement data related to the device **11** only by looking at the device **11**.

(59) In addition, the measurement data related to at least some devices **11** among the plurality of devices **11** is stored in the external storage device of the at least some devices **11**, and the address which is in the storage device is stored in association with each of the at least some devices **11** as the storage address of the measurement data. Accordingly, when the measurement data related to the device **11** is stored outside the device **11**, it is possible to check the measurement data related to the device **11** only by the user looking at the device **11**.

(60) In addition, the measurement data related to at least some other devices **11** among the plurality of devices **11** is stored in the internal storage device of each of the at least some other devices **11**, and the address which is in the storage device is stored, in association with each of the at least some

other devices **11**, as the storage address of the measurement data. Accordingly, when the measurement data related to the device **11** is stored inside the device **11**, it is possible to check the measurement data related to the device **11** only by the user looking at the device **11**. Accordingly, when the measurement data related to the device **11** is stored either outside or inside the device **11**, it is possible to check the measurement data related to the device **11** only by the looking at the device **11**.

(61) In addition, the measurement data related to the two or more devices **11** is stored in the single external storage device of the device **11**, and the addresses which are in the storage device and different from each other are respectively stored in association with the two or more devices **11** as the storage address of the measurement data. Accordingly, the maintenance and management system **1** can be simplified as the storage devices for the measurement data can be aggregated.

(62) In addition, the measurement data related to each of the two or more devices **11** is able to be acquired via one wireless communication device **14** provided outside the apparatus, and thus it is possible to save the trouble of individually establishing the wireless connection with each device **11**.

(63) In addition, the measurement data includes the measurement data obtained by the sensor as the device **11**, and thus it is possible to acquire the measurement data obtained by the sensor only by looking at the sensor.

(64) In addition, the measurement data includes the measurement data obtained by the sensor that is provided in the device **11**, or the sensor that is provided in the accessory of the device **11**, and thus it is possible to acquire, only by looking at the device **11**, the measurement data obtained by the sensor that is provided in the device **11** or the accessory.

(65) In addition, the measurement data includes the measurement data obtained by the sensor that is provided in the accessory on the upstream side or the downstream side with respect to the pipe as the device **11**, and thus it is possible to acquire, only by looking at the pipe, the measurement data obtained by the sensor that is provided in the accessory on the upstream side or the downstream side.

(66) In addition, the value of the configuration parameter of the target device **11** is further acquired and displayed, and thus it is possible to check, only by looking at the device **11**, the measurement data related to the device **11** and the value of the configuration parameter.

(67) In addition, the relationship diagram of the target device **11** is further acquired and displayed, and thus it is possible to check, only by looking at the device **11**, the relationship diagram showing the relationship between the device **11** and the other device **11**.

3. Appearance of Watching Terminal **13**

(68) FIG. **3** shows an appearance of the watching terminal **13**.

(69) The watching terminal **13** may be a wearable computer worn by the user, and in the present embodiment, it is a so-called head-mounted display of a head-worn type as an example. The watching terminal **13** may have a helmet **1311** worn on the head of the user, goggles **1312** covering the eyes of the user, and one or more sensors **1310**.

(70) The helmet **1311** protects the head of the user. It should be noted that the helmet **1311** may not be provided on the watching terminal **13**.

(71) The goggles **1312** are provided on a front side portion of the watching terminal **13** and cover the eyes of the user. The goggles **1312** is an example of the display unit **133**, and may be a display of an optical transmission type. The goggles **1312** may superimpose display contents and display the contents in a field of view of the user.

(72) The sensor **1310** is provided on the front side portion of the watching terminal **13**. In the present embodiment, as an example, the sensor **1310** is provided on the helmet **1311**, but may be provided on the goggles **1312**.

4. Operation of Watching Terminal **13**

(73) FIG. **4** shows an operation of the watching terminal **13**. The watching terminal **13** supports the

maintenance and management of the plant by performing processing of step S**11** to step S**17**.

(74) In step S**11**, the storage unit **130** stores, in association with each of the plurality of devices **11** existing in the plant, the storage address of the measurement data which is related. The storage unit **130** may further store the storage address of the value of the configuration parameter or the relationship diagram in association with the device **11**. In the present embodiment, as an example, a correspondence table between the device **11** and the storage address may be created by a plant manager to be stored in the storage unit **130**.

(75) It should be noted that the processing of step S**11** may be performed each time the operation of the watching terminal **13** is started, or may be performed each time the operation of the watching terminal **13** is started with a reference interval (one month as an example). Instead of this, the processing of step S**11** may be performed only at a first operation of the watching terminal **13**, and may not be performed at a second and subsequent operations.

(76) In step S**13**, the detection unit **131** detects the target device **11** that the user is looking at among the plurality of devices **11** existing in the plant. The detection unit **131** may detect the target device **11** by detecting the location and the line of sight of the user in the plant and referring to a database (not shown) in which the location coordinates of each device **11** in the plant are registered in advance. The detection unit **131** may detect the single device **11** as the target device **11**, or may detect each of the plurality of devices **11** as the target device **11**.

(77) In step S**15**, the acquisition unit **132** acquires, from the storage address associated with the target device **11**, the measurement data related to the target device **11**. The acquisition unit **132** may further acquire the value of the configuration parameter of the target device **11** or the relationship diagram from the storage address. When there are the plurality of target devices **11**, the acquisition unit **132** may acquire the measurement data or the like from the storage address for each target device **11**.

(78) In step S**17**, the display unit **133** displays the acquired content. When there are the plurality of target devices **11**, the display unit **133** may display the measurement data or the like for each target device **11**. As an example, the display unit **133** may display the measurement data or the like in association with each target device **11** by means of a balloon or a leader line.

5. Modification Example

(79) It should be noted that in the embodiment described above, the goggles **1312** have been described as the display of the optical transmission type; however, the goggles **1312** may be a display of a video transmission type. In this case, the goggles **1312** may have an image capturing unit that captures an image in front of the user, and display the image captured by the image capturing unit on an inner side surface of the goggles **1312**. In addition, the detection unit **131** may specify the line of sight of the user by using the image capturing unit. As an example, the detection unit **131** may detect, as the line of sight of the user, a straight line connecting a center of the goggles **1312**, and a center of a field of view obtained by the image capturing unit.

(80) In addition, when the watching terminal **13** is provided with the image capturing unit that captures the image in front of the user, the detection unit **131** may detect, as the target device **11**, the device existing in the captured image by the image capturing unit. For example, the detection unit **131** may detect the target device **11** by referring to a database in which the captured image is registered in advance for each device in the plant, and collating, with the database, an appearance of the device **11** which is acquired by performing image processing such as edge extraction processing on the captured image. Instead of this, the detection unit **131** may detect the target device **11** by a unique code being provided on an outer surface of each device **11**, and the code, which is detected in the captured image, being analyzed. The code may be a bar code, a two dimensional code (as an example, a QR code (registered trademark)), or the like, and may be provided in the device **11** by at least one of affixing, printing, or engraving.

(81) In addition, the acquisition unit **132** has been described to acquire the measurement data related to the target device **11**, the value of the configuration parameter, or the relationship diagram,

but may further acquire the document stored in the document database **18**. In this case, the storage unit **130** may store, as the storage address of the document, the address which is in the document database **18** in association with at least one device **11**.

(82) In addition, the acquisition unit **132** has been described to acquire the measurement data, the value of the configuration parameter, the relationship diagram, or the like, by the wireless communication, but may acquire at least some of these by the wired communication.

(83) In addition, the watching terminal **13** has been described to be arranged at the field site where the process is executed in the plant; however, as long as the detection unit **131** and the display unit **133** are arranged at the field site, at least one of the storage unit **130** and the acquisition unit **132** may be arranged in the management room or the instrument room of the plant, or may be arranged outside the plant.

(84) In addition, the apparatus has been described as the watching terminal **13**, but may be set as the maintenance terminal **12**, or may be set as another stationary apparatus. In these cases, the detection unit **131** may be a wearable device that is separated from the storage unit **130**, the acquisition unit **132**, the display unit **133**, or the like of the apparatus, and is worn by the user. In addition, the detection unit **131** may detect the line of sight or the point of gaze of the user by using a camera that captures the eyeball of the user without being worn by the user.

(85) In addition, various embodiments of the present invention may be described with reference to flowcharts and block diagrams whose blocks may represent (1) steps of processes in which operations are executed or (2) sections of apparatuses responsible for executing operations. Certain steps and sections may be implemented by dedicated circuitry, programmable circuitry supplied with computer-readable instructions stored on computer-readable media, and/or processors supplied with computer-readable instructions stored on computer-readable media. Dedicated circuitry may include digital and/or analog hardware circuits, and may include integrated circuits (IC) and/or discrete circuits. Programmable circuitry may include reconfigurable hardware circuits comprising logical AND, OR, XOR, NAND, NOR, and other logical operations, flip-flops, registers, memory elements, etc., such as field-programmable gate arrays (FPGA), programmable logic arrays (PLA), and the like.

(86) A computer-readable medium may include any tangible device that can store instructions to be executed by a suitable device, and as a result, the computer-readable medium having instructions stored in the tangible device comprises an article of manufacture including instructions which can be executed to create means for executing operations specified in the flowcharts or block diagrams. Examples of the computer-readable medium may include an electronic storage medium, a magnetic storage medium, an optical storage medium, an electromagnetic storage medium, a semiconductor storage medium, etc. Specific examples of the computer-readable medium may include a floppy (Registered Trademark) disk, a diskette, a hard disk, a random access memory (RAM), a read-only memory (ROM), an erasable programmable read-only memory (EPROM or Flash memory), an electrically erasable programmable read-only memory (EEPROM), a static random access memory (SRAM), a portable compact disc read-only memory (CD-ROM), a digital versatile disc (DVD), a Blu-ray (registered trademark) disc, a memory stick, an integrated circuit card, or the like.

(87) The computer-readable instructions may include assembler instructions, instruction-set-architecture (ISA) instructions, machine instructions, machine dependent instructions, microcode, firmware instructions, state-setting data, or either source code or object code written in any combination of one or more programming languages, including an object oriented programming language such as Smalltalk, JAVA (registered trademark), C++ or the like, and conventional procedural programming languages, such as the "C" programming language or similar programming languages.

(88) Computer-readable instructions may be provided to a processor of a general-purpose computer, special purpose computer, or other programmable data processing apparatus, or to programmable circuitry, locally or via a local area network (LAN), wide area network (WAN) such

as the Internet, etc., so that the computer-readable instructions are executed to create means for executing operations specified in the flowcharts or block diagrams. Examples of the processor include a computer processor, a processing unit, a microprocessor, a digital signal processor, a controller, a microcontroller, and the like.

(89) FIG. **5** shows an example of a computer **2200** in which a plurality of aspects of the present invention may be entirely or partially embodied. A program that is installed in the computer **2200** can cause the computer **2200** to function as operations associated with apparatuses according to the embodiments of the present invention or one or more sections of the apparatuses, or can cause the computer **2200** to execute the operations or the one or more sections thereof, and/or can cause the computer **2200** to execute processes according to the embodiments of the present invention or steps of the processes. Such a program may be executed by a CPU **2212** to cause a computer **2200** to execute certain operations associated with some or all of the blocks of flowcharts and block diagrams described herein.

(90) The computer **2200** according to the present embodiment includes the CPU **2212**, a RAM **2214**, a graphics controller **2216**, and a display device **2218**, which are interconnected by a host controller **2210**. The computer **2200** also includes input/output units such as a communication interface **2222**, a hard disk drive **2224**, a DVD-ROM drive **2226**, and an IC card drive, which are connected to the host controller **2210** via an input/output controller **2220**. The computer also includes legacy input/output units such as a ROM **2230** and a keyboard **2242**, which are connected to the input/output controller **2220** via an input/output chip **2240**.

(91) The CPU **2212** operates according to programs stored in the ROM **2230** and the RAM **2214**, thereby controlling each unit. The graphics controller **2216** obtains image data generated by the CPU **2212** on a frame buffer or the like provided in the RAM **2214** or in the graphics controller **2216** itself, and causes the image data to be displayed on the display device **2218**.

(92) The communication interface **2222** communicates with other electronic devices via a network. The hard disk drive **2224** stores programs and data used by the CPU **2212** within the computer **2200**. The DVD-ROM drive **2226** reads the programs or the data from a DVD-ROM **2201**, and provides the hard disk drive **2224** with the programs or the data via the RAM **2214**. The IC card drive reads the programs and the data from the IC card, and/or writes the programs and the data to the IC card.

(93) The ROM **2230** stores therein a boot program or the like executed by the computer **2200** at the time of activation, and/or a program depending on the hardware of the computer **2200**. The input/output chip **2240** may also connect various input/output units to the input/output controller **2220** via a parallel port, a serial port, a keyboard port, a mouse port, and the like.

(94) A program is provided by the computer-readable medium such as the DVD-ROM **2201** or the IC card. The program is read from the computer-readable medium, installed in the hard disk drive **2224**, the RAM **2214**, or the ROM **2230**, which is also an example of the computer-readable medium, and executed by the CPU **2212**. The information processing written in these programs is read into the computer **2200**, resulting in cooperation between a program and the above-mentioned various types of hardware resources. An apparatus or method may be constituted by realizing the operation or processing of information in accordance with the usage of the computer **2200**.

(95) For example, when a communication is executed between the computer **2200** and an external device, the CPU **2212** may execute a communication program loaded in the RAM **2214**, and instruct the communication interface **2222** to process the communication based on the processing written in the communication program. The communication interface **2222**, under control of the CPU **2212**, reads transmission data stored on a transmission buffering region provided in a recording medium such as the RAM **2214**, the hard disk drive **2224**, the DVD-ROM **2201**, or the IC card, and transmits the read transmission data to a network or writes reception data received from a network to a reception buffering region or the like provided on the recording medium.

(96) In addition, the CPU **2212** may cause all or a necessary portion of a file or a database to be

read into the RAM **2214**, the file or the database having been stored in an external recording medium such as the hard disk drive **2224**, the DVD-ROM drive **2226** (the DVD-ROM **2201**), the IC card, etc., and execute various types of processing on the data on the RAM **2214**. The CPU **2212** then writes back the processed data to the external recording medium.

(97) Various types of information, such as various types of programs, data, tables, and databases, may be stored in the recording medium to undergo information processing. The CPU **2212** may execute various types of processing on the data read from the RAM **2214** to write back a result to the RAM **2214**, the processing being described throughout the present disclosure, specified by instruction sequences of the programs, and including various types of operations, information processing, condition determinations, conditional branching, unconditional branching, information retrievals/replacements, or the like. In addition, the CPU **2212** may search for information in a file, a database, etc., in the recording medium. For example, when a plurality of entries, each having an attribute value of a first attribute associated with an attribute value of a second attribute, are stored in the recording medium, the CPU **2212** may search for an entry matching the condition whose attribute value of the first attribute is designated, from among the plurality of entries, and read the attribute value of the second attribute stored in the entry, thereby obtaining the attribute value of the second attribute associated with the first attribute satisfying the predetermined condition.

(98) The above-described program or software modules may be stored in the computer-readable medium on the computer **2200** or near the computer **2200**. In addition, a recording medium such as a hard disk or a RAM provided in a server system connected to a dedicated communication network or the Internet can be used as a computer-readable medium, thereby providing the program to the computer **2200** via the network.

(99) While the embodiments of the present invention have been described, the technical scope of the invention is not limited to the above-described embodiments. It is apparent to persons skilled in the art that various alterations and improvements can be added to the above-described embodiments. It is also apparent from the scope of the claims that the embodiments added with such alterations or improvements can be included in the technical scope of the invention.

(100) The operations, procedures, steps, and stages of each process performed by an apparatus, system, program, and method shown in the claims, embodiments, or diagrams can be performed in any order as long as the order is not indicated by "prior to," "before," or the like and as long as the output from a previous process is not used in a later process. Even if the process flow is described using phrases such as "first" or "next" in the claims, embodiments, or diagrams, it does not necessarily mean that the process must be performed in this order.

(101) According to this specification, each of the following aspects is also disclosed.

(102) A first aspect provides an apparatus. The apparatus may include a storage unit configured to store, in association with each of a plurality of devices existing in a plant, a storage address of measurement data which is related. The apparatus may include a detection unit configured to detect, among the plurality of devices, a target device that a user is looking at. The apparatus may include an acquisition unit configured to acquire, from the storage address associated with the target device, measurement data related to the target device. The apparatus may include a display unit configured to display a content acquired by the acquisition unit.

(103) The storage unit may be configured to respectively store, in association with each of at least one device among the plurality of devices, storage addresses of a plurality of types of measurement data.

(104) Measurement data related to at least some devices among the plurality of devices may be stored in an external storage device of the at least some devices. The storage unit may be configured to store an address, which is in the storage device, in association with each of the at least some devices.

(105) Measurement data related to two or more devices among the at least some devices may be stored in a single external storage device of the two or more devices. The storage unit may be

configured to store addresses, which are in the storage device and different from each other, in association with each of the two or more devices.

(106) Measurement data related to at least some other devices, which are different from the at least some devices, among the plurality of devices may be stored in an internal storage device of each of the at least some other devices. The storage unit may be configured to store, in association with each of the at least some other devices, an address which is in the internal storage device of the each of the at least some other devices.

(107) The acquisition unit may be configured to acquire measurement data from two or more storage devices via one wireless communication device provided outside the apparatus.

(108) A plurality of pieces of the measurement data related to the plurality of devices may include measurement data obtained by a sensor that is provided in a device, or a sensor that is provided in an accessory of the device.

(109) A plurality of pieces of the measurement data related to the plurality of devices may include measurement data obtained by a sensor as a device.

(110) A plurality of pieces of the measurement data related to the plurality of devices may include measurement data obtained by a sensor which is provided in an accessory of an upstream side or a downstream side with respect to a pipe as a device.

(111) In one or more devices among the plurality of devices, a value of at least one parameter may be able to be set. The storage unit may be further configured to store, in association with each of the one or more devices, a storage address of a value of a parameter of the each of the one or more devices. The acquisition unit may be further configured to acquire, from a storage address of a value of a parameter associated with the target device, the value of the parameter of the target device.

(112) The storage unit may be further configured to store a storage address of a relationship diagram showing, for each device existing in the plant, a relationship between the device and another device. The acquisition unit may be further configured to acquire the relationship diagram from the storage address of the relationship diagram associated with the target device.

(113) A second aspect provides a system. The system may include the apparatus according to the first aspect. The system may include at least one storage device configured to store, in association with each of at least some devices among the plurality of devices, measurement data related to the each of the at least some devices.

(114) A third aspect provides a method. The method may include storing, in association with each of a plurality of devices existing in a plant, a storage address of measurement data which is related. The method may include detecting, among the plurality of devices, a target device that a user is looking at. The method may include acquiring, from the storage address associated with the target device, measurement data related to the target device. The method may include displaying a content acquired by the acquiring.

(115) A fourth aspect provides a computer-readable medium having recorded thereon a program. The program may cause a computer to function as a storage unit configured to store, in association with each of a plurality of devices existing in a plant, a storage address of measurement data which is related. The program may cause the computer to function as a detection unit configured to detect, among the plurality of devices, a target device that a user is looking at. The program may cause the computer to function as an acquisition unit configured to acquire, from the storage address associated with the target device, measurement data related to the target device. The program may cause the computer to function as a display unit configured to display a content acquired by the acquisition unit.

EXPLANATION OF REFERENCES

(116) **1** maintenance and management system **11** device **12** maintenance terminal **13** watching terminal **14** wireless communication device **15** operation control apparatus **16** interface apparatus **17** resource management apparatus **18** document database **19** maintenance and management

apparatus **100** control network **101** network **130** storage unit **131** detection unit **132** acquisition unit **133** display unit **1310** sensor **1311** helmet **1312** goggles **1900** device ledger **2200** computer **2201** DVD-ROM **2210** host controller **2212** CPU **2214** RAM **2216** graphics controller **2218** display device **2220** input/output controller **2222** communication interface **2224** hard disk drive **2226** DVD-ROM drive **2230** ROM **2240** input/output chip **2242** keyboard

Claims

1. An apparatus comprising: at least one processor; a storage unit that uses the at least one processor to store a storage address of measurement data which is related to each of a plurality of devices existing in a plant: a detection unit that uses the at least one processor to detect, among the plurality of devices, a target device that a user is looking at; an acquisition unit that uses the at least one processor to acquire, from the storage address associated with the target device, the measurement data related to the target device; and a display unit that uses the at least one processor to display a content acquired by the acquisition unit; wherein the detection unit uses the at least one processor to detect the target device by detecting a location and a line of sight of the user in the plant; the acquisition unit uses the at least one processor to acquire the measurement data related to the target device disposed at each of a plurality of field sites where a process is executed in the plant in response to the user looking at the target device; and the storage unit uses the at least one processor to store the storage address each time an operation of the apparatus is started or each time an operation of the apparatus is started within a reference interval.
2. The apparatus according to claim 1, wherein the storage unit uses the at least one processor to respectively store, in association with each of at least one device among the plurality of devices, storage addresses of a plurality of types of measurement data.
3. The apparatus according to claim 2, wherein measurement data related to at least some devices among the plurality of devices is stored in an external storage device of the at least some devices, and the storage unit uses the at least one processor to store an address, which is in the storage device, in association with each of the at least some devices.
4. The apparatus according to claim 2, wherein a plurality of pieces of the measurement data related to the plurality of devices include measurement data obtained by a sensor that is provided in a device, or a sensor that is provided in an accessory of the device.
5. The apparatus according to claim 2, wherein a plurality of pieces of the measurement data related to the plurality of devices include measurement data obtained by a sensor as a device.
6. The apparatus according to claim 2, wherein a plurality of pieces of the measurement data related to the plurality of devices include measurement data obtained by a sensor which is provided in an accessory on an upstream side or a downstream side with respect to a pipe as a device.
7. The apparatus according to claim 1, wherein measurement data related to at least some devices among the plurality of devices is stored in an external storage device of the at least some devices, and the storage unit uses the at least one processor to store an address, which is in the storage device, in association with each of the at least some devices.
8. The apparatus according to claim 7, wherein measurement data related to two or more devices among the at least some devices is stored in a single external storage device of the two or more devices, and the storage unit uses the at least one processor to store addresses, which are in the storage device and different from each other, in association with each of the two or more devices.
9. The apparatus according to claim 8, wherein measurement data related to at least some other devices, which are different from the at least some devices, among the plurality of devices is stored in an internal storage device of each of the at least some other devices, and the storage unit uses the at least one processor to store, in association with each of the at least some other devices, an address which is in the internal storage device of the each of the at least some other devices.
10. The apparatus according to claim 8, wherein the acquisition unit uses the at least one processor

to acquire measurement data from two or more storage devices via one wireless communication device provided outside the apparatus.

11. The apparatus according to claim 7, wherein measurement data related to at least some other devices, which are different from the at least some devices, among the plurality of devices is stored in an internal storage device of each of the at least some other devices, and the storage unit uses the at least one processor to store, in association with each of the at least some other devices, an address which is in the internal storage device of the each of the at least some other devices.

12. The apparatus according to claim 7, wherein the acquisition unit uses the at least one processor to acquire measurement data from two or more storage devices via one wireless communication device provided outside the apparatus.

13. The apparatus according to claim 1, wherein a plurality of pieces of the measurement data related to the plurality of devices include measurement data obtained by a sensor that is provided in a device, or a sensor that is provided in an accessory of the device.

14. The apparatus according to claim 1, wherein a plurality of pieces of the measurement data related to the plurality of devices include measurement data obtained by a sensor as a device.

15. The apparatus according to claim 1, wherein a plurality of pieces of the measurement data related to the plurality of devices include measurement data obtained by a sensor which is provided in an accessory on an upstream side or a downstream side with respect to a pipe as a device.

16. The apparatus according to claim 1, wherein in one or more devices among the plurality of devices, a value of at least one parameter can be set, the storage unit further uses the at least one processor to store, in association with each of the one or more devices, a storage address of a value of a parameter of the each of the one or more devices, and the acquisition unit further uses the at least one processor to acquire, from a storage address of a value of a parameter associated with the target device, the value of the parameter of the target device.

17. The apparatus according to claim 1, wherein the storage unit further uses the at least one processor to store a storage address of a relationship diagram showing, for each device existing in the plant, a relationship between the device and another device, and the acquisition unit further uses the at least one processor to acquire the relationship diagram from the storage address of the relationship diagram associated with the target device.

18. A system comprising: the apparatus according to claim 1; and at least one storage device that uses the at least one processor to store, in association with each of at least some devices among the plurality of devices, measurement data related to the each of the at least some devices.

19. A method comprising: storing a storage address of measurement data which is related to each of a plurality of devices existing in a plant; detecting, among the plurality of devices, a target device that a user is looking at; acquiring, from the storage address associated with the target device, the measurement data related to the target device; and displaying a content acquired by the acquiring; wherein the detecting includes detecting the target device by detecting a location and a line of sight of the user in the plant; the acquiring includes acquiring the measurement data related to the target device disposed at each of a plurality of field sites where a process is executed in the plant in response to the user looking at the target device; and the storing includes storing the storage address each time an operation of anapparatus is started or each time an operation of an apparatus is started within a reference interval.

20. A non-transitory computer-readable medium having recorded thereon a program that causes a computer to function as: a storage unit configured to store a storage address of measurement data which is related to each of a plurality of devices existing in a plant; a detection unit configured to detect, among the plurality of devices, a target device that a user is looking at; an acquisition unit configured to acquire, from the storage address associated with the target device, the measurement data related to the target device; and a display unit configured to display a content acquired by the acquisition unit; wherein the detection unit uses the at least one processor to detect the target device by detecting a location and a line of sight of the user in the plant; the acquisition unit uses the at

least one processor to acquire the measurement data related to the target device disposed at each of a plurality of field sites where a process is executed in the plant in response to the user looking at the target device; and the storage unit uses the at least one processor to store the storage address each time an operation of an apparatus is started or each time an operation of an apparatus is started within a reference interval.