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(54) **A PORTABLE PATIENT MONITORING SYSTEM INCLUDING LOCATION IDENTIFICATION
CAPABILITY**

TRAGBARES PATIENTENÜBERWACHUNGSSYSTEM MIT POSITIONSERFASSUNGSFUNKTION

SYSTEME DE SURVEILLANCE DE PATIENT PORTABLE COMPRENANT UNE FONCTION
D'IDENTIFICATION D'EMPLACEMENT

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Description

Field of the Invention

[0001] The present invention relates to a portable patient monitoring device and associated docking station supporting location identification.

Background of the Invention

[0002] Present day monitoring devices are typically designed specifically for different care areas inside or outside of a hospital. In the case of a trauma patient, the monitoring typically begins at the site of the accident. Ambulances carry transport monitors, which have been designed to be rugged for use in mobile ground and air vehicles. The patient is transported to the hospital and may initially be held in an emergency room (ER) for evaluation of the severity of the accident or illness. This usually requires disconnecting the patient from the ambulance monitor and reconnecting the patient to the ER monitor. Monitors for this area of the hospital often have a wireless connection to a central station monitor and information network allowing the monitor and patient to be mobile so they can be deployed, viewed, and controlled where needed in the ER. If a patient is critically ill the patient is typically taken to an operating room (OR) or to an Intensive Care Unit (ICU), and again disconnected from the ER monitor and reconnected to the OR or ICU monitor.

[0003] A patient is usually moved from an OR to a recovery area and then to an ICU, or from an ICU to a less-acute "step-down" area or "ward", and again may need to be physically disconnected and reconnected from the OR monitor to a transport monitor or to an ICU or step-down monitor. Healthier patients may be outfitted with wearable "Telemetry" devices that are semi-mobile or mobile to allow a patient to leave the bedside and ambulate within a care unit or hospital. Fully ambulatory patients may be permitted exercise by walking within a specific area designated by a clinician. After further improvement in physiological status a patient may be no longer need to be continuously monitored but has vital signs periodically spot-checked and is eventually given a final complete evaluation before discharge.

[0004] It is desirable that a portable patient monitoring device with fixed and mobile modes of operation is used to support the different patient treatment stages in order to continuously monitor a patient even during those times when a patient is in transit, e.g., between patient room, examining room, operating room, etc: It is further desirable that a portable patient monitoring device is able to identify patient location or at least a location of a current docking station to which it is attached in a fixed mode of operation. Known systems used to determine location information of a portable device attached to a docking station use complex docking station technology and are consequently costly, lower in reliability and are typically

also power hungry. These factors are particularly burdensome when large quantities of docking stations are employed in a hospital, for example. A system according to invention principles addresses this problem and associated problems.

[0005] US 6221012 discloses a system according to the preamble of claim 1.

[0006] US 2006/69885 discloses a system for controlling devices that are implanted in to the human body and provides a GPS system for identifying a location of a patient whose implants have ceased to function or have reached a threshold alert level.

Summary of Invention

[0007] According to an aspect of the present invention, there is provided a system comprising the features of claim 1.

[0008] According to a further aspect of the present invention, there is provided a method comprising the features of claim 10.

[0009] A docking station advantageously provides a location identifier to a portable processing device which processes the location identifier to determine docking station location (and other information) and to upload settings and configuration information related to an identified location which is retained until a different docking station location is encountered. In a system for use in a docking station suitable for attaching to a portable patient monitoring device for processing signal parameters acquired from a patient, a power coupler couples power to provide electrical power to a portable processing device. An adaptive communication interface, in a first mode of operation, communicates an identifier associated with a particular docking station to the portable processing device, and in a second mode of operation, establishes connection of the portable processing device to a network.

Brief Description of the Drawings

[0010] In the drawing:

Figure 1 is a block diagram of a system including a docking station and portable processing device, according to the principles of the invention.

Figure 2 shows a flowchart of a method for processing docking station location information, according to the principles of the present invention.

Detailed Description of Invention

[0011] A docking station advantageously stores a code (a location identifier) and provides the location identifier to a portable processing device docked with the docking station (or in the vicinity of the docking station in a wireless communication embodiment). The portable processing device comprises a portable medical device such as a patient parameter monitoring device but may also be an-

other portable device such as an infusion pump, a PDA (Personal Data Assistant) for use by a physician, ventilation apparatus, anesthesiology apparatus or another portable medical device. The portable processing device determines docking station location (and other information) using the location identifier received from the docking station. This system uses processing resources in a portable processing device and enables a simple, cost effective docking station to be employed. Substantial cost reduction and simplification improvement is derived since there are typically many more docking stations than portable devices in a system and the portable processing devices usually contain surplus processing resources. The portable device location determination functions advantageously use processing functions already present in the portable processing device. This minimizes any added complexity and cost to the portable device. The system acquires a unique location identifier code from the docking station and uses it to identify the docking station location and stores this information to identify the portable device last fixed location when in a mobile mode of operation. This information is used to identify the last location of a patient when the device was last docked and is used to upload settings related to the location which are retained until the portable device detects a different docking station location.

[0012] Figure 1 is a block diagram of a system including docking station 10 and portable processing device 20. Docking station 10 and portable processing device 20 use inductive coupling for power coupling and use optical transmission for inter-device communication. Docking Station 10 maintains a location identifier code used for identifying a geographical location (i.e., a position in a hospital comprising a care unit, floor, wing, street address, for example). The location identifier is associated with a particular docking station and comprises an Ethernet compatible MAC address, an IP address, a port identifier, an Internet compatible address, a LAN address or another electronic code that is associated in a stored map with a geographic location. The map may be stored in portable device 20 or in a remote repository on a network. Multiple portable patient monitors are monitored by a central monitoring system typically supervised by a nurse. Docking station 10 provides several functions for portable medical devices such as device 20. Docking station 10 provides a physical mount for a portable device and recharges portable device batteries and provides power directly to a portable device. Docking station 10 also establishes communication connections between portable device 20 and networks and other devices. For this purpose, in the exemplary embodiment, portable device 20 establishes Ethernet protocol compatible communication via docking station 10 to a hospital Local Area Network (LAN), for example. In other embodiments different communication protocols may be used. The Ethernet communication protocol standard is used to establish communication to different diagnostic medical devices in a hospital and is capable of supporting communi-

cation with many devices internal and external to a hospital, for example. Further, an identifier is attached to data packets conveyed using Ethernet communication and comprises a number called an Ethernet (or MAC) Address, which uniquely identifies devices on an Ethernet network. However, in Ethernet compatible network communication, the physical network is divorced from conveyed data. Consequently, the source of a received Ethernet message is known but not the physical location of a transmitting device sending the message.

[0013] Docking station 10 employs communication interface 25 for establishing and maintaining Ethernet compatible communication via a hospital LAN, for example. In a healthcare setting such as a hospital it is desirable to be able to determine the location of portable medical (e.g., patient monitoring) device 20 and the docking station 10 to which it is attached in order to report the location of a patient (e.g., via a hospital LAN to an executable management application), as well as to provide other functions. A docking station is fixed in location and a portable medical device is freely movable. Docking station 10 stores physical location information in the form of a location identifier (such as an Ethernet MAC address) for transmission to requesting portable processing device 20. Docking station 10 employs communication interface 25 to manage a communication link with a docked portable processing device (e.g., device 20) to facilitate identification of the location of docking station 10 by the portable device.

[0014] Docking station 10 communicates a location identifier via interface 25 and optical transmission drivers 17 to optical receiver 21 and adaptive communication interface (Ethernet communication controller) 33 of docked portable device 20. In response to docking of portable device 20 in docking station 10, power coupler 15 operating from a voltage supply couples electrical power via coupler 39 to device 20. Power coupler 15 and coupler 39 may comprise a known transformer arrangement for electrically isolated coupling of electrical power, for example. Coupler 39 charges batteries 43 via charging unit 37 and provides power to an internal power supply to provide power to operate the portable patient monitor. Batteries 43 provide electrical power for portable device 20 in its mobile undocked mode of operation. Controller 35 controls operation of device 20 based on stored pre-programmed instruction and directs processing of patient parameter data for presentation on display 45. Portable device 20 includes a data acquisition processor 50 for receiving patient parameter data from multiple different patient attached sensors. This received patient parameter data is processed by acquisition processor 50, operating in conjunction with controller 35, to provide processed patient parameter data for presentation on display 45. The processed patient parameter data comprises physiological data including, electro-cardiograph (ECG) data, blood parameter data, ventilation parameter data, infusion pump related data, blood pressure data, pulse rate data and temperature data. Controller 35 man-

ages electrically isolated bidirectional Ethernet compatible communication with docking station 10 using Ethernet controller 33. Ethernet compatible data is bidirectionally communicated between Ethernet controller 33 and a hospital LAN via docking station 10 using electrically isolated driver 23 receiver 19 as well as electrically isolated receiver 21 and driver 17.

[0015] Upon initial docking, load sense unit 13 detects power is being supplied by docking station 10 to device 20 and provides a signal, indicating device 20 is docked with docking station 10, to communication control unit 27 in communication interface 25. In response to this initial docking sense signal and to a determination that there is an active Ethernet communication link between docking station 10 and device 20, unit 27 directs multiplexer 31 to interrupt the Ethernet compatible communication link between portable device 20 and the hospital LAN. This enables unit 27 to provide a message in a first mode of operation via multiplexer 31 to portable device 20 via the Ethernet communication link optical driver 17 and receiver 21 in response to the initial docking sense signal and active Ethernet link determination. A message is sent each time portable device 20 is docked with a docking station. The message includes an identifier (e.g., MAC address) associated with docking station 10 that enables portable device 20 (or a remote device) to determine a geographic location of docking station 10 from a map associating docking station identifiers with corresponding geographic locations of the docking stations. If portable device 20 is not powered on when it is docked, or if device is turned off 20 while docked, the message is not sent until the device is powered on.

[0016] In response to sending the message communication interface 25, in a second mode of operation, establishes connection of portable processing device 20 with the hospital LAN. Portable patient monitoring device 20 communicates the identifier associated with docking station 10 to a remote device via the hospital LAN in the second mode of operation. Device 20 communicates a location related identifier derived (using the map) based on the particular docking station identifier or an identifier identifying portable processing device 20 to the remote device. Specifically, adaptive communication interface 33 of device 20 communicates the identifier associated with docking station 10 or a location related identifier derived based on the docking station identifier, to the remote device. This is communicated by wireless or wired communication. Adaptive communication interface 33 in conjunction with controller 35 adaptively switches between a wireless network connection when undocked and a docking station supported wired network connection when docked in docking station 10.

[0017] In response to communication of the docking station 10 identifier to the remote device, portable patient monitoring device 20 receives from the remote device via the hospital LAN and docking station 10 one or more information items. The information items include, patient geographic location information derived based on the

docking station 10 identifier, configuration information for use in configuring portable patient monitoring device 20 based on geographic location, configuration information for use in selecting particular features of the portable patient monitoring device 20 for activation based on geographic location and information supporting operation of device 20 with a second device associated with the geographic location. Additional information items include an alarm setting associated with a patient parameter and configuration information for use in selecting particular features of portable device 20 for activation based on geographic location and user entitlement information. In another embodiment, one or more of the information items may be derived directly by portable device 20 based on the received identifier associated with docking station 10.

[0018] The described information items are usable for, determination of patient location, configuring device 20 to suit a particular location, configuring particular secured features of device 20 based on location and for associating device 20 with other devices in a room or attached to a patient, for example. Multiple portable patient monitoring devices used by a single particular patient are associated with a particular patient by docking the multiple portable patient monitoring devices into a single particular docking station, for example,. Portable processing device 20 also employs a unique identifier (a MAC address or another identifier) different to the docking station 10 identifier. The portable device 20 identifier in another embodiment may be used in conjunction with the docking station identifier for use in providing information to a central monitoring system (monitoring multiple docking stations) or for acquiring particular information items as previously described for use by a particular device 20 in a particular location.

[0019] A central monitoring system monitors multiple portable devices of a group of patients and communicates with a portable device (such as device 20) via docking stations (such as docking station 10), for example. The central monitoring system processes alarm signals and other data from the portable devices. In response to receiving an alarm from portable device 20 via station 10, a central monitoring system uses a received docking station identifier (and in another embodiment also a device 20 identifier) to indicate a location of device 20 (and docking station 10). The central monitoring system responds to a received alarm by identifying a location by generating a text message, initiating activation of an alarm indicator (e.g., by activating an alarm light adjacent a patient room) or by initiating display of an alarm and associated location on a reproduction device, (e.g. by a displayed icon on a map).

[0020] Further, a user enters configuration settings (e.g., alarm settings) that vary based on portable processing device 20 location using the central monitoring system. The entered settings are communicated via the hospital LAN to device 20 for use in patient parameter monitoring functions. Similarly, a user enters data or

commands using a central monitoring system (or other processing device on the hospital LAN) to enable particular functions based on location of portable monitoring device 20 and based on predetermined payment, entitlement or license criteria. User entered data and configuration settings received by portable device 20 are stored by controller 35 in internal memory. The stored data may include, for example, an identifier (and other information) associated with a previous docking station (or received via the previously used docking station) prior to the subsequent docking station and employed by portable device 20. The stored data may also include, information derived using an identifier associated with the previously used docking station and a time and date stamp of undocking. The user entered data and configuration settings related to a last docked location remain in effect until they are manually changed or are changed by virtue of portable device 20 detecting a new docking at a different docking station location. The central monitoring system (and any other device on the hospital LAN) communicates with portable processing device 20 via the LAN and docking station 10 interface unit 25 whilst device 20 is docked. The central monitoring system and other LAN devices also communicate wirelessly with device 20 when it is undocked and in a mobile mode of operation via wireless communication implemented by RF communication unit 107. Unit 107 includes multiple wireless communication transceivers (individually including a receiver and transmitter pair) using wireless technologies which may include at least one of, Wireless Local Area Network (WLAN), e.g., 802.11a, 802.11b, 802.11g standard compatible communication, Wireless Patient Area Network (WPAN), e.g., 802.11a, 802.11b, 802.11g, 802.15.x standard compatible communication, or Wireless Wide Area Network (WWAN) e.g. GSM/GPRS standard compatible communication, for example. RF communication unit 107 supports communication with a wireless locator engine for continuously tracking location of a patient throughout a hospital, for example.

[0021] In another embodiment docking station 10 similarly supports wireless communication with LAN devices or portable device 20 implemented by RF communication unit 103. Unit 103 includes multiple wireless communication transceivers (individually including a receiver and transmitter pair) using one or more wireless technologies including WLAN 802.11a, 802.11b, 802.11g, 802.15.x, WPAN, and GSM/GPRS. The portable monitor device 20 supports the above mentioned wireless communications functions using communication interfaces installed by a plugin card, for example.

[0022] Controller 35 of portable patient monitoring device 20 uses the elapsed time duration occurring since last docking with a docking station together with location information derived using the identifier associated with the last docking station in order to estimate a current location of device 20. For this purpose, controller 35 uses a likelihood estimation. The likelihood estimation is based on the assumption that the shorter the elapsed time du-

ration since the last docking, the more likely it is a current undocked location is likely to be near the last docked location.

[0023] Figure 2 shows a flowchart of a method for processing docking station location information performed by controller 35 of portable device 20. In step 202 following the start at step 201, controller 35 directs communication interface 33 in establishing bidirectional communication of device 20 with a hospital LAN. In step 204 controller 35 directs communication interface 33 in acquiring from docking station 10 an identifier that is associated with this docking station and is usable for deriving geographic location of docking station 10. Controller 35 in conjunction with interface 33 in step 208 communicates the acquired identifier to a remote system via the hospital LAN. In response in step 210 interface 33 receives information from the remote system dependent on the geographic location of docking station 10. The process of Figure 2 terminates at step 212.

[0024] The difficulties involved in making power and communication connections between a docking station and a portable processing device increase in importance as new generations of devices shrink in size. Therefore, for reasons of cost and size, it is advantageous to achieve the features of the location identification processing system without adding a separate communication channel and to use an existing docking station to portable device communication link. In another embodiment a second channel is used to support the location and other information determination system. Further, the system is usable in any device that has both a portable and fixed mode of operation.

[0025] The system and process presented in Figures 1 and 2 are not exclusive. Although this invention has been described with reference to particular embodiments, it is to be understood that the embodiments and variations shown and described herein are for illustration only and that various modifications may be implemented by those skilled in the art without departing from the scope of the invention as defined by the appended claims. A location processing system according to invention principles may be used for monitoring location in any system involved mobile devices with fixed communication points and may be used with a wireless locator engine to support continuous tracking of location of a patient throughout a hospital, for example.

Claims

1. A portable patient monitoring device (20) for monitoring and processing signal parameters acquired from a patient and being suitable for being attached to a docking station (10), comprising:

a power coupler (39) for receiving power from a power coupler of the docking station and providing the received power to said portable patient

monitoring device;

characterised by

a controller (35) for determining whether said portable patient monitoring device is attached to a particular docking station and is powered on; and

a communication interface (33) for,

in a first mode of operation, receiving an identifier associated with said particular docking station, and

in a second mode of operation, establishing connection of said portable patient monitoring device to a network wherein a remote device determines a geographic location of said particular docking station from a map associating said identifier with a corresponding geographic location, and transmits configuration settings related to the determined geographic location to said particular docking station and the monitoring device transmitting patient data to said network, wherein said communication interface inhibits said first mode of operation and said communication interface prevents the configuration settings from being changed until said determination that said portable patient monitoring device is attached to said particular docking station and is powered on is made by said controller.

2. A system according to claim 1, including one or more of the following features:

(i) a data acquisition processor (50) for receiving and processing patient parameter data from a plurality of different patient attached sensors to provide processed patient parameter data; and an image reproduction device (45) for displaying processed patient parameter data;

(ii) wherein said power coupler (39) comprises a power unit (37) for recharging a battery and supplying power to said portable patient monitoring device and

said communication interface (33) communicates to said network via wireless communication;

(iii) wherein said location identifier associated with said particular docking station enables determination of and association of a plurality of medical devices with a particular patient;

(iv) wherein said portable patient monitoring device communicates said particular docking station location identifier to a remote device via said network in said second mode, and enabling said remote device to use said location identifier to initiate identification of a location derived based on said location identifier;

(v) wherein said communication interface (33) couples a data transducer in said portable patient monitoring device to a corresponding transducer in said particular docking station to support connection of said portable patient monitoring device to said network and to bidirectionally exchange data;

(vi) wherein said communication interface (33) communicates said particular docking station location identifier by at least one of, (i) wireless and (ii) wired, communication;

(vii) wherein said communication interface (33) supports communication using wireless technologies including at least one of, (a) WLAN 802.11b standard compatible communication, (b) 802.11a standard compatible communication, (c) 802.11g standard compatible communication, (d) Bluetooth 802.15 standard compatible communication, and (e) GSM/GPRS standard compatible communication;

(viii) wherein said communication interface (33) adaptively switches between a wireless network connection when undocked and a docking station supported wired network connection when docked in said particular docking station; and

(ix) a memory (35) for storing at least one of, (a) an identifier associated with a previous docking station employed by said portable patient monitoring device prior to a subsequent docking station, (b) information derived using said location identifier associated with said previous docking station and (c) a time stamp of undocking.

3. A system according to claim 2, including one or more of the following features:

(i) wherein said processed patient parameter data comprises physiological data including at least one of, (a) electro-cardiograph (ECG) data, (b) blood parameter data, (c) ventilation parameter data, (d) infusion pump related data, (e) blood pressure data, (f) pulse rate data and (g) temperature data;

(ii) wherein said portable patient monitoring device communicates, to a remote device via said network in said second mode said particular docking station location identifier and in response, said portable patient monitoring device acquires at least one of, (i) patient geographic location information, (ii) configuration information for use in configuring said portable patient monitoring device based on geographic location, (iii) configuration information for use in selecting particular features of said portable patient monitoring device for activation based on geographic location and (iv) information supporting operation of said portable patient monitoring device with a second device associated

with said geographic location;

(iii) wherein said portable patient monitoring device communicates, to a remote device via said network in said second mode, said particular docking station location identifier and

in response, said portable patient monitoring device acquires at least one of, (i) an alarm setting associated with a patient parameter and (ii) configuration information for use in selecting particular features of said portable patient monitoring device for activation based on geographic location and user entitlement information;

(iv) wherein said location identifier associated with said particular docking station comprises at least one of, (a) an Ethernet compatible MAC address, (b) an IP address, (c) a port identifier, (d) an Internet compatible address and (e) a LAN address; or

(v) wherein said remote device uses said location identifier to initiate identification of said location by at least one of, (a) generating a text message, (b) initiating activation of an alarm indicator and (c) initiating display of an alarm and associated location on a reproduction device.

4. A system according to claim 1 wherein said portable patient monitoring device acquires said information in response to an identifier of said portable patient monitoring device.

5. A system as claimed in claim 1, wherein said docking station (10) comprises:

a docking station power coupler (15) for coupling power to provide electrical power to a portable patient monitoring device;

a docking station controller (13,25) for determining whether said portable patient monitoring device is attached to said particular docking station and is powered on; and

a docking station communication interface (25) for,

in a first mode of operation, communicating a location identifier associated with a said particular docking station to said portable patient monitoring device, and

in a second mode of operation, establishing connection of said portable patient monitoring device to a network for enabling determination of a geographic location of the docking station using said location identifier, transmitting of configuration settings related to the determined geographic location to said particular docking station and transmitting patient data to said network, said communication interface inhibits said first mode of operation until said determination

said portable patient monitoring device is attached to the docking station is made by said controller and said communication interface prevents changing of configuration settings until said controller determines said portable patient monitoring device is attached to said particular docking station and is powered on.

6. A system according to claim 1, including one or more of the following features:

(i) wherein said docking station controller (13,25) detects said portable patient monitoring device is attached to said docking station and inhibits said first mode of operation and subsequently initiates said second mode of operation; and

(ii) wherein said docking station communication interface (25) supports communication using wireless technologies including at least one of, (a) WLAN 802.11b standard compatible communication, (b) 802.11a standard compatible communication, (c) 802.11g standard compatible communication, (d) Bluetooth 802.15 standard compatible communication, and (e) GSM/GPRS standard compatible communication.

7. A system according to claim 6 wherein said docking station controller (13,25) detects said portable patient monitoring device is attached to said particular docking station by detecting at least one of, (a) an active communication link to said network is present, (b) an active communication link is present between said particular docking station and said portable patient monitoring device and (c) a portable patient monitoring device is docked with said particular docking station and receiving electrical power from said docking station.

8. A system according to claim 7 wherein in response to said detection, said docking station controller (13,25) initiates interruption of said active communication link and communicates said identifier associated with said particular docking station to said portable patient monitoring device in said first mode of operation and subsequently re-connects said active communication link to said network in said second mode of operation.

9. A system according to claim 7 wherein said active communication link comprises an Ethernet compatible communication link.

10. A method for use by a portable patient monitoring device for monitoring and processing signal parameters acquired from a patient and being suitable for being attached to a docking station, comprising the

activities of:

receiving power from a power coupler of the docking station; and
providing the received power to said portable patient monitoring device;

characterised by

determining whether said portable patient monitoring device is attached to a particular docking station and is powered on;
receiving an identifier associated with said particular docking station in a first mode of operation, and
establishing connection of said portable patient monitoring device to a network in a second mode of operation wherein a remote device determines a geographic location of said particular docking station from a map associating said identifier with a corresponding geographic location and transmits configuration settings related to the determined geographic location to said particular docking station, and the monitoring device transmitting patient data to said network, said first mode of operation being inhibited until said determination is made that said portable patient monitoring device is attached to said particular docking station and is powered on and changing of configuration settings being prevented until it is determined that said portable patient monitoring device is attached to said particular docking station and is powered on.

11. A method as claimed in claim 10, further comprising the activities of:

coupling power from the docking station to provide electrical power to a portable processing device;

characterised by

determining said portable patient monitoring device is attached to a particular docking station and is powered on; and

in a first mode of operation, communicating a location identifier associated with said particular docking station to said portable patient monitoring device, and

in a second mode of operation, establishing connection of said portable patient monitoring device to a network for enabling determination of a geographic location of said particular docking station, transmitting configuration settings related to the determined geographic location and transmitting of patient data to said network, said first mode of operation being inhibited until said determination is made that said portable patient monitoring device is attached to said partic-

ular docking station and is powered on preventing changing of configuration settings until a controller determines said portable patient monitoring device is attached to said particular docking station and is powered on.

Patentansprüche

1. Tragbares Patientenüberwachungsgerät (20) zum Überwachen und Verarbeiten von von einem Patienten erfassten Signalparametern, das zum Anbringen an einer Dockingstation (10) geeignet ist und Folgendes umfasst:

einen Leistungskoppler (39) zum Empfangen von Leistung von einem Leistungskoppler der Dockingstation und zum Übertragen der empfangenen Leistung zu dem genannten tragbaren Patientenüberwachungsgerät;

gekennzeichnet durch

eine Steuerung (35) zum Ermitteln, ob das genannte tragbare Patientenüberwachungsgerät an einer bestimmten Dockingstation angebracht und eingeschaltet ist; und
eine Kommunikationsschnittstelle (33) zum:

Empfangen, in einem ersten Betriebsmodus, einer mit der genannten bestimmten Dockingstation assoziierten Kennung, und Herstellen, in einem zweiten Betriebsmodus, einer Verbindung zwischen dem genannten tragbaren Patientenüberwachungsgerät und einem Netzwerk, wobei ein ortsfernes Gerät einen geografischen Ort der genannten bestimmten Dockingstation anhand einer Karte ermittelt, die die genannte Kennung mit einem entsprechenden geografischen Ort assoziiert, und Konfigurationseinstellungen in Bezug auf den bestimmten geografischen Ort zu der genannten bestimmten Dockingstation überträgt, und wobei das Überwachungsgerät Patientendaten zu dem genannten Netzwerk überträgt, wobei die genannte Kommunikationsschnittstelle den genannten ersten Betriebsmodus sperrt und die genannte Kommunikationsschnittstelle eine Änderung der Konfigurationseinstellung verhindert, bis die genannte Steuerung festgestellt hat, dass das genannte tragbare Patientenüberwachungsgerät an der genannten bestimmten Dockingstation angebracht und eingeschaltet ist.

2. System nach Anspruch 1, das eines oder mehrere der folgenden Merkmale umfasst:

(i) einen Datenerfassungsprozessor (50) zum Empfangen und Verarbeiten von Patientenparameterdaten von mehreren verschiedenen am Patienten angebrachten Sensoren, um verarbeitete Patientenparameterdaten bereitzustellen; und
 5 ein Bildwiedergabegerät (45) zum Anzeigen von verarbeiteten Patientenparameterdaten;
 (ii) wobei der genannte Leistungskoppler (39) eine Leistungseinheit (37) zum Aufladen einer Batterie und zum Zuführen von Leistung zu dem genannten tragbaren Patientenüberwachungs-
 10 gerät umfasst, und
 die genannte Kommunikationsschnittstelle (33) kommuniziert drahtlos mit dem genannten Netzwerk;
 15 (iii) wobei die genannte, mit der genannten bestimmten Dockingstation assoziierte Ortskennung die Ermittlung von und Assoziation mehrerer medizinischer Geräte mit einem bestimmten Patienten ermöglicht;
 20 (iv) wobei das genannte tragbare Patientenüberwachungsgerät die genannte bestimmte Dockingstationsortskennung zu einem ortsfernen Gerät über das genannte Netzwerk in dem genannten zweiten Modus übermittelt und es ermöglicht, dass das genannte ortsferne Gerät die genannte Ortskennung zum Einleiten der Identifikation eines auf der Basis der genannten Ortskennung abgeleiteten Ortes benutzt;
 25 (v) wobei die genannte Kommunikationsschnittstelle (33) einen Datenwandler in dem genannten tragbaren Patientenüberwachungsgerät mit einem entsprechenden Wandler in der genannten bestimmten Dockingstation koppelt, um eine Verbindung zwischen dem genannten tragbaren Patientenüberwachungsgerät und dem genannten Netzwerk zu unterstützen und Daten bidirektional auszutauschen;
 30 (vi) wobei die genannte Kommunikationsschnittstelle (33) die genannte bestimmte Dockingstationsortskennung durch (i) drahtlose und/oder (ii) drahtgebundene Kommunikation übermittelt;
 35 (vii) wobei die genannte Kommunikationsschnittstelle (33) Kommunikation über drahtlose Technologien inklusive wenigstens einer der Folgenden unterstützt: (a) mit dem Standard WLAN 802.11b kompatible Kommunikation, (b) mit dem Standard 802.11a kompatible Kommunikation, (c) mit dem Standard 802.11g kompatible Kommunikation, (d) mit dem Standard Bluetooth 802.15 kompatible Kommunikation, und (e) mit dem Standard GSM/GPRS kompatible Kommunikation;
 40 (viii) wobei die genannte Kommunikationsschnittstelle (33) adaptiv zwischen einer drahtlosen Netzwerkverbindung, wenn es nicht an-

gedockt ist, und einer durch eine Dockingstation unterstützte drahtgebundene Netzwerkverbindung umschaltet, wenn es in der genannten bestimmten Dockingstation angedockt ist; und
 (ix) einen Speicher (35) zum Speichern von wenigstens einem der folgenden:

- (a) einer Kennung, die mit einer vorherigen Dockingstation assoziiert ist, die vor einer nachfolgenden Dockingstation von dem genannten tragbaren Patientenüberwachungsgerät benutzt wurde, (b) Informationen, die anhand der genannten mit der genannten vorherigen Dockingstation assoziierten Ortskennung abgeleitet wurden, und (c) einem Zeitstempel des Abdokkens.

3. System nach Anspruch 2, das eines oder mehrere der folgenden Merkmale umfasst:

- (i) wobei die genannten verarbeiteten Patientenparameterdaten physiologische Daten umfassen, die wenigstens eines der Folgenden beinhalten: (a) elektrokardiografische (EKG) Daten, (b) Blutparameterdaten, (c) Beatmungsparameterdaten, (d) infusionspumpenbezogene Daten, (e) Blutdruckdaten, (f) Pulsfrequenzdaten und (g) Temperaturdaten;
- (ii) wobei das genannte tragbare Patientenüberwachungsgerät mit einem ortsfernen Gerät über das genannte Netzwerk in dem genannten zweiten Modus die genannte bestimmte Dockingstationsortskennung übermittelt, und als Reaktion darauf das genannte tragbare Patientenüberwachungsgerät wenigstens eines der Folgenden erfasst: (i) geografische Ortsinformationen des Patienten, (ii) Konfigurationsinformationen zur Verwendung beim Konfigurieren des genannten tragbaren Patientenüberwachungsgeräts auf der Basis eines geografischen Ortes, (iii) Konfigurationsinformationen zur Verwendung beim Auswählen bestimmter Merkmale des genannten tragbaren Patientenüberwachungsgeräts für eine Aktivierung auf der Basis eines geografischen Ortes, und (iv) Informationen, die den Betrieb des genannten tragbaren Patientenüberwachungsgeräts mit einem mit dem genannten geografischen Ort assoziierten zweiten Gerät unterstützen;
- (iii) wobei das genannte tragbare Patientenüberwachungsgerät die genannte bestimmte Dockingstationsortskennung in dem genannten zweiten Modus mit einem ortsfernen Gerät über das genannte Netzwerk übermittelt, und als Reaktion darauf das genannte tragbare Patientenüberwachungsgerät wenigstens eines der Folgenden erfasst: (i) eine mit einem Patientenparameter assoziierte Alarminstellung,

- und (ii) Konfigurationsinformationen zur Verwendung beim Auswählen bestimmter Merkmale des genannten tragbaren Patientenüberwachungsgeräts zur Aktivierung auf der Basis von geografischen Orts- und Benutzerberechtigungsinformationen; 5
- (iv) wobei die genannte, mit der genannten bestimmten Dockingstation assoziierte Ortskennung wenigstens eines der Folgenden umfasst: 10
- (a) eine Ethernet-kompatible MAC-Adresse, (b) eine IP-Adresse, (c) eine Portkennung, (d) eine Internetkompatible Adresse und (e) eine LAN-Adresse; oder
- (v) wobei das genannte ortsferne Gerät die genannte Ortskennung zum Einleiten der Identifikation des genannten Ortes durch wenigstens eines der Folgenden benutzt: (a) Erzeugen einer Textnachricht, (b) Einleiten einer Aktivierung eines Alarmindikators, und (c) Einleiten einer Anzeige eines Alarms und eines zugehörigen Orts auf einem Wiedergabegerät. 20
4. System nach Anspruch 1, wobei das genannte tragbare Patientenüberwachungsgerät die genannten Informationen als Reaktion auf eine Kennung des genannten tragbaren Patientenüberwachungsgeräts erfasst. 25
5. System nach Anspruch 1, wobei die genannte Dockingstation (10) Folgendes umfasst: 30
- einen Dockingstationsleistungskoppler (15) zum Koppeln von Leistung zum Bereitstellen von elektrischer Leistung zu einem tragbaren Patientenüberwachungsgerät; 35
- eine Dockingstationssteuerung (13, 25) zum Übermitteln, ob das genannte tragbare Patientenüberwachungsgerät an der genannten bestimmten Dockingstation angebracht und eingeschaltet ist; und 40
- eine Dockingstationskommunikationsschnittstelle (25) zum:
- Übermitteln, in einem ersten Betriebsmodus, einer mit der genannten bestimmten Dockingstation assoziierten Ortskennung zu dem genannten tragbaren Patientenüberwachungsgerät, und 45
- Herstellen, in einem zweiten Betriebsmodus, einer Verbindung zwischen dem genannten tragbaren Patientenüberwachungsgerät und einem Netzwerk zum Ermöglichen einer Ermittlung eines geografischen Ortes der Dockingstation anhand der genannten Ortskennung, Übertragen von Konfigurationseinstellungen in Bezug auf den ermittelten geografischen Ort zu der genannten bestimmten Dockingstation und 50 55

Übertragen von Patientendaten zu dem genannten Netzwerk, wobei die genannte Kommunikationsschnittstelle den genannten Betriebsmodus sperrt, bis die genannte Steuerung festgestellt hat, dass das genannte tragbare Patientenüberwachungsgerät an der genannten Dockingstation angebracht ist, und die genannte Kommunikationsschnittstelle eine Änderung von Konfigurationseinstellungen verhindert, bis die genannte Steuerung feststellt, dass das genannte tragbare Patientenüberwachungsgerät an der genannten tragbaren Dockingstation angebracht und eingeschaltet ist.

6. System nach Anspruch 1, das ein oder mehrere der folgenden Merkmale beinhaltet:

- (i) wobei die genannte Dockingstationssteuerung (13, 25) erkennt, dass das genannte tragbare Patientenüberwachungsgerät an der genannten Dockingstation angebracht ist, und den genannten ersten Betriebsmodus sperrt und nachfolgend den genannten zweiten Betriebsmodus einleitet; und
- (ii) wobei die genannte Dockingstationskommunikationsschnittstelle (25) Kommunikation über drahtlose Technologien unterstützt, inklusive wenigstens einer der folgenden: (a) mit dem Standard WLAN 802.11 b kompatible Kommunikation, (b) mit dem Standard 802.11a kompatible Kommunikation, (c) mit dem Standard 802.11g kompatible Kommunikation, (d) mit dem Standard Bluetooth 802.15 kompatible Kommunikation, und (e) mit dem Standard GSM/GPRS kompatible Kommunikation.

7. System nach Anspruch 6, wobei:

die genannte Dockingstationssteuerung (13, 25) erkennt, dass das genannte tragbare Patientenüberwachungsgerät an der genannten bestimmten Dockingstation angebracht ist, durch Erkennen von wenigstens einem der Folgenden: (a) Vorliegen einer aktiven Kommunikationsverbindung mit dem genannten Netzwerk, (b) Vorliegen einer aktiven Kommunikationsverbindung zwischen der genannten bestimmten Dockingstation und dem genannten tragbaren Patientenüberwachungsgerät, (c) Andocken eines tragbaren Patientenüberwachungsgeräts an der genannten bestimmten Dockingstation und Empfangen von elektrischer Leistung von der genannten Dockingstation.

8. System nach Anspruch 7, wobei:

die genannte Dockingstationssteuerung (13, 25) als Reaktion auf die genannte Erkennung eine Unterbrechung der genannten aktiven Kommunikationsverbindung einleitet und die mit der genannten bestimmten Dockingstation assoziierte Kennung in dem genannten ersten Betriebsmodus zu dem genannten tragbaren Patientenüberwachungsgerät übermittelt und dann in dem genannten zweiten Betriebsmodus die genannte aktive Kommunikationsverbindung wieder mit dem genannten Netzwerk verbindet.

9. System nach Anspruch 7, wobei die genannte aktive Kommunikationsverbindung eine Ethernet-kompatible Kommunikationsverbindung umfasst.

10. Verfahren zur Verwendung eines tragbaren Patientenüberwachungsgeräts zum Überwachen und Verarbeiten von von einem Patienten benötigten Signalparametern, das zum Anbringen an einer Dockingstation geeignet ist, das die folgenden Aktivitäten beinhaltet:

Empfangen von Leistung von einem Leistungskoppler der Dockingstation; und
Senden der empfangenen Leistung zu dem genannten tragbaren Patientenüberwachungsgerät;

gekennzeichnet durch:

Ermitteln, ob das genannte tragbare Patientenüberwachungsgerät an einer bestimmten Dockingstation angebracht und eingeschaltet ist;

Empfangen einer mit einer genannten bestimmten Dockingstation assoziierten Kennung in einem ersten Betriebsmodus, und
Herstellen einer Verbindung zwischen dem genannten tragbaren Patientenüberwachungsgerät und einem Netzwerk in einem zweiten Betriebsmodus, wobei ein ortsfernes Gerät einen geografischen Ort der genannten bestimmten Dockingstation anhand einer Karte ermittelt, die die genannte Kennung mit einem entsprechenden geografischen Ort assoziiert, und Konfigurationseinstellungen in Bezug auf den bestimmten geografischen Ort zu der genannten bestimmten Dockingstation überträgt, und das Überwachungsgerät Patientendaten zu dem genannten Netzwerk überträgt, wobei der genannte erste Betriebsmodus gesperrt wird, bis festgestellt wurde, dass das genannte tragbare Patientenüberwachungsgerät an der genannten bestimmten Dockingstation angebracht und eingeschaltet ist, und eine Änderung von Konfigurati-

onseinstellungen verhindert wird, bis festgestellt wurde, dass das genannte Patientenüberwachungsgerät an der genannten bestimmten Dockingstation angebracht und eingeschaltet ist.

11. Verfahren nach Anspruch 10, das ferner die folgenden Aktivitäten beinhaltet:

Koppeln von Leistung von der Dockingstation zum Übertragen von elektrischer Leistung zu einem tragbaren Verarbeitungsgerät;
gekennzeichnet durch:

Ermitteln, ob das genannte tragbare Patientenüberwachungsgerät an einer bestimmten Dockingstation angebracht und eingeschaltet ist; und

Übermitteln, in einem ersten Betriebsmodus, einer mit der genannten bestimmten Dockingstation assoziierten Ortskennung zu dem genannten tragbaren Patientenüberwachungsgerät, und

Herstellen, in einem zweiten Betriebsmodus, einer Verbindung zwischen dem genannten tragbaren Patientenüberwachungsgerät und einem Netzwerk, um die Ermittlung eines geografischen Ortes der genannten bestimmten Dockingstation zu ermöglichen, Übertragen von Konfigurationseinstellungen in Bezug auf den ermittelten geografischen Ort und Übertragen von Patientendaten zu dem genannten Netzwerk, wobei der genannte erste Betriebsmodus gesperrt wird, bis festgestellt wurde, dass das genannte tragbare Patientenüberwachungsgerät an der genannten bestimmten Dockingstation angebracht und eingeschaltet ist, und eine Änderung von Konfigurationseinstellungen verhindert wird, bis eine Steuerung feststellt, dass das genannte tragbare Patientenüberwachungsgerät an der genannten bestimmten Dockingstation angebracht und eingeschaltet ist.

Revendications

1. Dispositif de surveillance de patient portable (20) pour surveiller et traiter des paramètres de signaux acquis auprès d'un patient et étant en mesure d'être fixé à une station d'accueil (10), comprenant :

un coupleur de puissance (39) pour recevoir du courant à partir d'un coupleur de puissance de la station d'accueil et fournir le courant reçu audit dispositif de surveillance de patient portable ;
caractérisé par

un contrôleur (35) pour déterminer si ledit dispositif de surveillance de patient portable est fixé à une station d'accueil particulière et est sous tension ; et

une interface de communication (33) pour,

dans un premier mode de fonctionnement, recevoir un identifiant associé à ladite station d'accueil particulière, et

dans un second mode de fonctionnement, établir la connexion dudit dispositif de surveillance de patient portable à un réseau où un dispositif à distance détermine un emplacement géographique de ladite station d'accueil particulière à partir d'une carte associant ledit identifiant à un emplacement géographique correspondant, et transmet des paramètres de configuration liés à l'emplacement géographique déterminé à ladite station d'accueil particulière, le dispositif de surveillance transmettant des données sur un patient audit réseau, où ladite interface de communication entrave ledit premier mode de fonctionnement et ladite interface de communication empêche de modifier les paramètres de configuration jusqu'à ce que ladite détermination que ledit dispositif de surveillance de patient portable est fixé à ladite station d'accueil particulière et est sous tension soit effectuée par ledit contrôleur.

2. Système selon la revendication 1, incluant une ou plusieurs des caractéristiques suivantes :

(i) un processeur d'acquisition de données (50) pour recevoir et traiter des données de paramètres d'un patient à partir d'une pluralité de différents capteurs fixés sur un patient pour fournir des données de paramètres d'un patient traitées ; et

un dispositif de reproduction d'image (45) pour afficher des données de paramètres d'un patient traitées ;

(ii) où ledit coupleur de puissance (39) comprend un bloc d'alimentation (37) pour recharger une batterie et alimenter en courant ledit dispositif de surveillance de patient portable et ladite interface de communication (33) communique vers ledit réseau par communication sans fil ;

(iii) où ledit identifiant d'emplacement associé à ladite station d'accueil particulière permet la détermination et association d'une pluralité de dispositifs médicaux avec un patient particulier ;

(iv) où ledit dispositif de surveillance de patient portable communique ledit identifiant d'emplacement de la station d'accueil particulière à un

dispositif à distance par ledit réseau dans ledit second mode, permettant audit dispositif à distance d'utiliser ledit identifiant d'emplacement pour lancer l'identification d'un emplacement dérivé sur la base dudit identifiant d'emplacement ;

(v) où ladite interface de communication (33) couple un transducteur de données dans ledit dispositif de surveillance de patient portable à un transducteur correspondant dans ladite station d'accueil particulière pour prendre en charge la connexion dudit dispositif de surveillance de patient portable audit réseau et pour échanger des données de manière bidirectionnelle ;

(vi) où ladite interface de communication (33) communique ledit identifiant d'emplacement de la station d'accueil particulière par au moins l'une d'une communication (i) sans fil et (ii) câblée ;

(vii) où ladite interface de communication (33) prend en charge la communication utilisant des technologies sans fil, y compris au moins l'une parmi : (a) la communication compatible avec la norme WLAN 802.11b, (b) la communication compatible avec la norme 802.11a, (c) la communication compatible avec la norme 802.11g, (d) la communication compatible avec la norme Bluetooth 802.15, et (e) la communication compatible avec la norme GSM/GPRS ;

(viii) où ladite interface de communication (33) commute de façon adaptative entre une connexion au réseau sans fil lorsque qu'elle n'est pas ancrée, et une connexion au réseau câblé prise en charge par la station d'accueil lorsqu'elle est ancrée à ladite station d'accueil particulière ; et

(ix) une mémoire (35) pour stocker au moins l'un parmi : (a) un identifiant associé à une station d'accueil précédente employée par ledit dispositif de surveillance de patient portable avant une station d'accueil successive, (b) des informations dérivées en utilisant ledit identifiant d'emplacement associé à ladite station d'accueil précédente et (c) une estampille temporelle de désancrage.

3. Système selon la revendication 2, incluant une ou plusieurs des caractéristiques suivantes :

(i) où lesdites données de paramètres d'un patient traitées comprennent des données physiologiques incluant au moins l'une parmi : (a) des données d'électrocardiogramme (ECG), (b) des données de paramètres du sang, (c) des données de paramètres de ventilation, (d) des données relatives à la pompe à perfusion, (e) des données de pression sanguine, (f) des données de fréquence du pouls et (g) des données de

- température ;
- (ii) où ledit dispositif de surveillance de patient portable communique, à un dispositif à distance par ledit réseau dans ledit second mode, ledit identifiant d'emplacement de la station d'accueil particulière et
- 5 en réponse, ledit dispositif de surveillance de patient portable acquiert au moins l'une parmi :
- (i) des informations sur l'emplacement géographique d'un patient, (ii) des informations de configuration pour l'utilisation dans la configuration dudit dispositif de surveillance de patient portable sur la base d'un emplacement géographique, (iii) des informations de configuration pour l'utilisation dans la sélection de caractéristiques particulières dudit dispositif de surveillance de patient portable pour l'activation sur la base d'un emplacement géographique et (iv) des informations prenant en charge le fonctionnement dudit dispositif de surveillance de patient portable avec un second dispositif associé audit emplacement géographique;
- 10 (iii) où ledit dispositif de surveillance de patient portable communique, à un dispositif à distance par ledit réseau dans ledit second mode, ledit identifiant d'emplacement de la station d'accueil particulière et
- 15 en réponse, ledit dispositif de surveillance de patient portable acquiert au moins l'un parmi :
- (i) un paramètre d'alarme associé à un paramètre du patient, et (ii) des informations de configuration pour l'utilisation dans la sélection de caractéristiques particulières dudit dispositif de surveillance de patient portable pour l'activation sur la base de l'emplacement géographique et des informations sur les droits de l'utilisateur ;
- 20 (iv) où ledit identifiant d'emplacement associé à ladite station d'accueil particulière comprend au moins l'un parmi : (a) une adresse MAC compatible Ethernet, (b) une adresse IP, (c) un identifiant de port, (d) une adresse compatible Internet et (e) une adresse LAN ; ou
- 25 (v) où ledit dispositif à distance utilise ledit identifiant d'emplacement pour lancer l'identification dudit emplacement par au moins l'un parmi: (a) la génération d'un message de texte, (b) le lancement de l'activation d'un indicateur d'alarme et (c) le lancement de l'affichage d'une alarme et de l'emplacement associé sur un dispositif de reproduction.
- 30
- 35
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4. Système selon la revendication 1 où ledit dispositif de surveillance de patient portable acquiert lesdites informations en réponse à un identifiant dudit dispositif de surveillance de patient portable.
5. Système tel que revendiqué dans la revendication 1, où ladite station d'accueil (10) comprend :

un coupleur de puissance de station d'accueil (15) pour le couplage de puissance pour fournir du courant électrique à un dispositif de surveillance de patient portable ;

un contrôleur de station d'accueil (13,25) pour déterminer si ledit dispositif de surveillance de patient portable est fixé à ladite station d'accueil particulière et est sous tension ; et

une interface de communication de station d'accueil (25) pour,

dans un premier mode de fonctionnement, communiquer un identifiant d'emplacement associé à ladite station d'accueil particulière audit dispositif de surveillance de patient portable, et

dans un second mode de fonctionnement, établir la connexion dudit dispositif de surveillance de patient portable à un réseau pour permettre la détermination d'un emplacement géographique de la station d'accueil en utilisant ledit identifiant d'emplacement, transmettre des paramètres de configuration liés à l'emplacement géographique déterminé à ladite station d'accueil particulière et transmettre des données sur le patient audit réseau, ladite interface de communication entrave ledit premier mode de fonctionnement jusqu'à ce que ladite détermination que ledit dispositif de surveillance de patient portable est fixé à la station d'accueil soit effectuée par ledit contrôleur et ladite interface de communication empêche de modifier les paramètres de configuration jusqu'à ce que ledit contrôleur détermine que ledit dispositif de surveillance de patient portable est fixé à ladite station d'accueil particulière et est sous tension.

6. Système selon la revendication 1, incluant une ou plusieurs des caractéristiques suivantes :

(i) où ledit contrôleur de station d'accueil (13,25) détecte que ledit dispositif de surveillance de patient portable est fixé à ladite station d'accueil et entrave ledit premier mode de fonctionnement et lance successivement ledit second mode de fonctionnement ; et

(ii) où ladite interface de communication de station d'accueil (25) prend en charge la communication utilisant des technologies sans fil, y compris au moins l'une parmi: (a) la communication compatible avec la norme WLAN 802.11b, (b) la communication compatible avec la norme 802.11a, (c) la communication compatible avec la norme 802.11g, (d) la communication compatible avec la norme Bluetooth 802.15, et (e) la communication compatible avec la norme

me GSM/GPRS ;

7. Système selon la revendication 6 où
ledit contrôleur de station d'accueil (13,25) détecte
que ledit dispositif de surveillance de patient portable
est fixé à ladite station d'accueil particulière en dé- 5
tectant au moins l'un des éléments suivants: (a) une
liaison de communication active audit réseau est
présente, (b) une liaison de communication active
est présente entre ladite station d'accueil particulière
et ledit dispositif de surveillance de patient portable 10
et (c) un dispositif de surveillance de patient portable
est ancré à ladite station d'accueil particulière et re-
çoit du courant électrique à partir de la station d'ac-
cueil. 15
8. Système selon la revendication 7 où
en réponse à ladite détection, ledit contrôleur de sta-
tion d'accueil (13,25) lance l'interruption de ladite
liaison de communication active et communique ledit 20
identifiant associé à ladite station d'accueil particu-
lière audit dispositif de surveillance de patient por-
table dans ledit premier mode de fonctionnement et
reconnecte successivement ladite liaison de com-
munication active audit réseau dans ledit second 25
mode de fonctionnement.
9. Système selon la revendication 7 où
ladite liaison de communication active comprend
une liaison de communication compatible Ethernet. 30
10. Procédé d'utilisation par un dispositif de surveillance
de patient portable pour surveiller et traiter des pa-
ramètres de signaux acquis auprès d'un patient et
étant en mesure d'être fixé à une station d'accueil, 35
comprenant les activités consistant à :

recevoir du courant à partir d'un coupleur de
puissance de la station d'accueil ;
et fournir le courant reçu audit dispositif de sur- 40
veillance de patient portable ;
caractérisé par le fait de
déterminer si ledit dispositif de surveillance de
patient portable est fixé à ladite station d'accueil
particulière et est sous tension ; 45
recevoir un identifiant associé à ladite station
d'accueil particulière dans un premier mode de
fonctionnement, et
établir la connexion dudit dispositif de surveillan- 50
ce de patient portable à un réseau dans un se-
cond mode de fonctionnement où un dispositif
à distance détermine un emplacement géogra-
phique de ladite station d'accueil particulière à
partir d'une carte associant ledit identifiant à un
emplacement géographique correspondant, et 55
transmet des paramètres de configuration liés
à l'emplacement géographique déterminé à la-
dite station d'accueil particulière, le dispositif de

surveillance transmettant des données sur le
patient audit réseau, ledit premier mode de fonc-
tionnement étant entravé jusqu'à ce que l'on ef-
fectue ladite détermination que ledit dispositif de
surveillance de patient portable est fixé à ladite
station d'accueil particulière et est sous tension
et ladite modification des paramètres de confi-
guration étant empêchée jusqu'à ce que l'on dé-
termine que ledit dispositif de surveillance de
patient portable est fixé à ladite station d'accueil
particulière et est sous tension.

11. Procédé tel que revendiqué à la revendication 10,
comprenant en outre les activités consistant au :

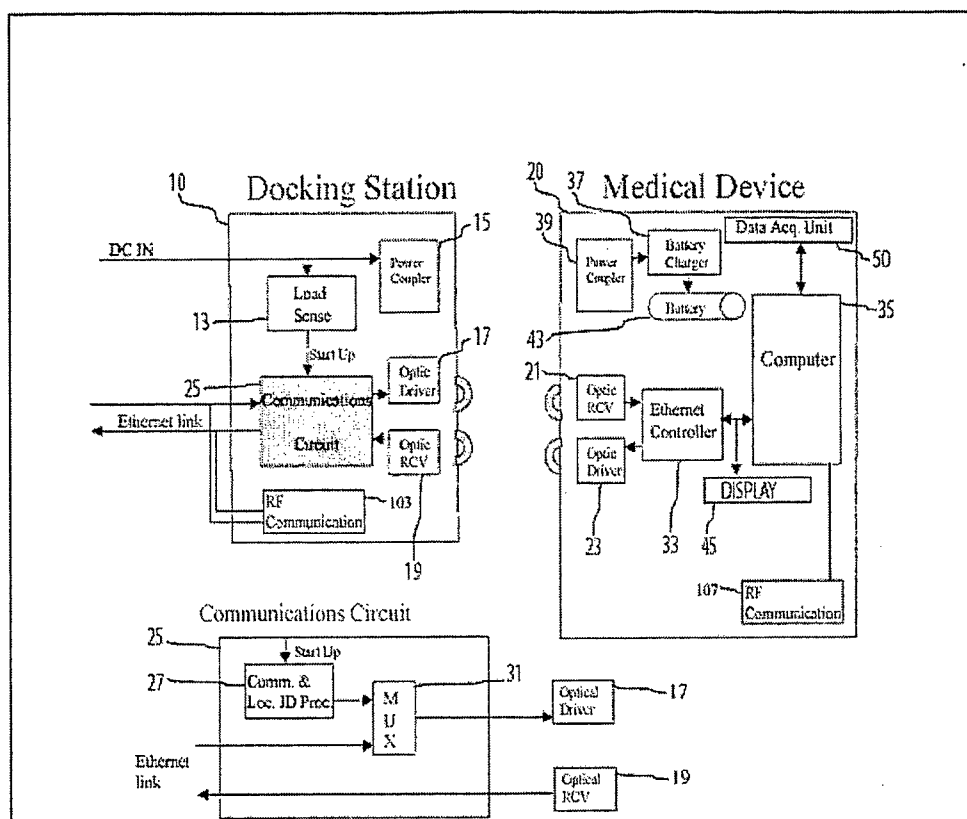
couplage de puissance à partir de la station d'ac-
cueil pour fournir du courant électrique à un dis-
positif de traitement portable ;

caractérisé par le fait de
déterminer si ledit dispositif de surveillance de
patient portable est fixé à ladite station d'accueil
particulière et est sous tension ; et

dans un premier mode de fonctionnement,
communiquer un identifiant d'emplacement
associé à ladite station d'accueil particulière
audit dispositif de surveillance de patient
portable, et

dans un second mode de fonctionnement,
établir la connexion dudit dispositif de sur-
veillance de patient portable à un réseau
pour permettre la détermination d'un em-
placement géographique de la station d'ac-
cueil particulière, transmettre des paramè-
tres de configuration liés à l'emplacement
géographique déterminé et transmettre des
données sur le patient audit réseau, ledit
premier mode de fonctionnement étant en-
travé jusqu'à ce que l'on effectue ladite dé-
termination que ledit dispositif de surveillan-
ce de patient portable est fixé à ladite station
d'accueil particulière et est sous tension,
empêchant la modification des paramètres
de configuration jusqu'à ce qu'un contrôleur
détermine que ledit dispositif de surveillan-
ce de patient portable est fixé à ladite station
d'accueil particulière et est sous tension.

FIGURE 1



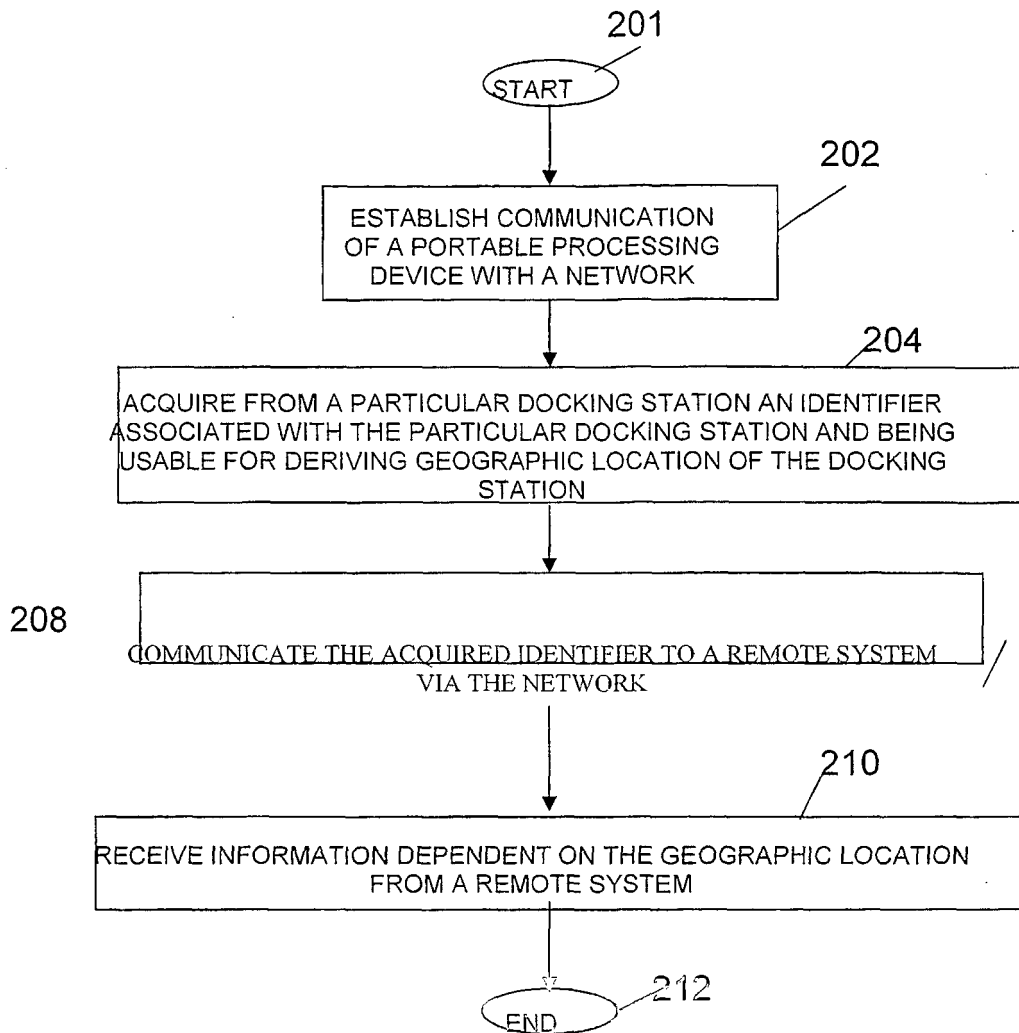


FIGURE 2

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 6221012 B [0005]
- US 200669885 B [0006]

专利名称(译)	便携式患者监测系统，包括位置识别能力		
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外部链接	Espacenet		

摘要(译)

扩展坞有利地向便携式处理设备提供位置标识符，该便携式处理设备处理位置标识符以确定扩展坞位置（和其他信息）并上载与识别的位置有关的设置和配置信息，该信息被保留直到不同的扩展坞位置为止。遇到。在用于对接站的系统中，该对接站适于附接到便携式患者监测设备以处理从患者获取的信号参数，功率耦合器耦合电力以向便携式处理设备提供电力。在第一操作模式中，自适应通信接口将与特定对接站相关联的标识符传送到便携式处理设备，并且在第二操作模式中，建立便携式处理设备到网络的连接。

FIGURE 1

