(19) **United States**
(12) **Patent Application Publication** (10) Pub. No.: **US 2002/0031228 A1**
  Karkas et al. (43) **Pub. Date:** **Mar. 14, 2002**

(54) **DEVICES**

(76) Inventors: **Kalle J. Karkas**, Oulu (FI); **Matti Kantola**, Nokia (FI); **Jaakko Paakkonen**, Oulu (FI)

Correspondence Address:
PERMAN & GREEN
425 POST ROAD
FAIRFIELD, CT 06430 (US)

Publication Classification

(57) **ABSTRACT**

An access device includes means for receiving, via a wireless communication link, a key and validity information. The access device also includes wireless communication means for establishing a connection with another party, and for providing the key and validity information to that party. If the key and validity information are determined by the other party to be valid access is provided.
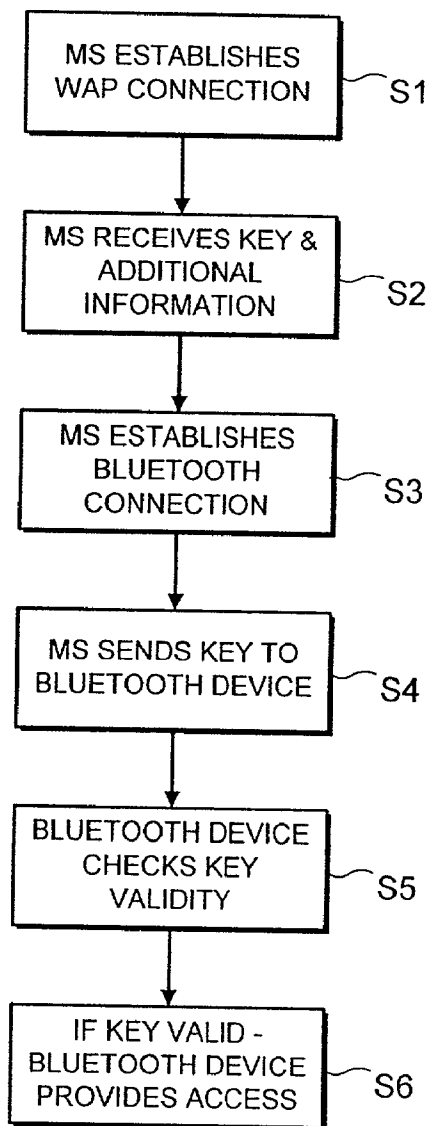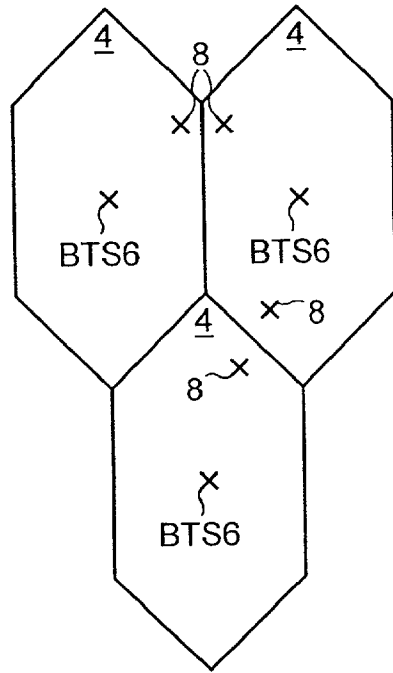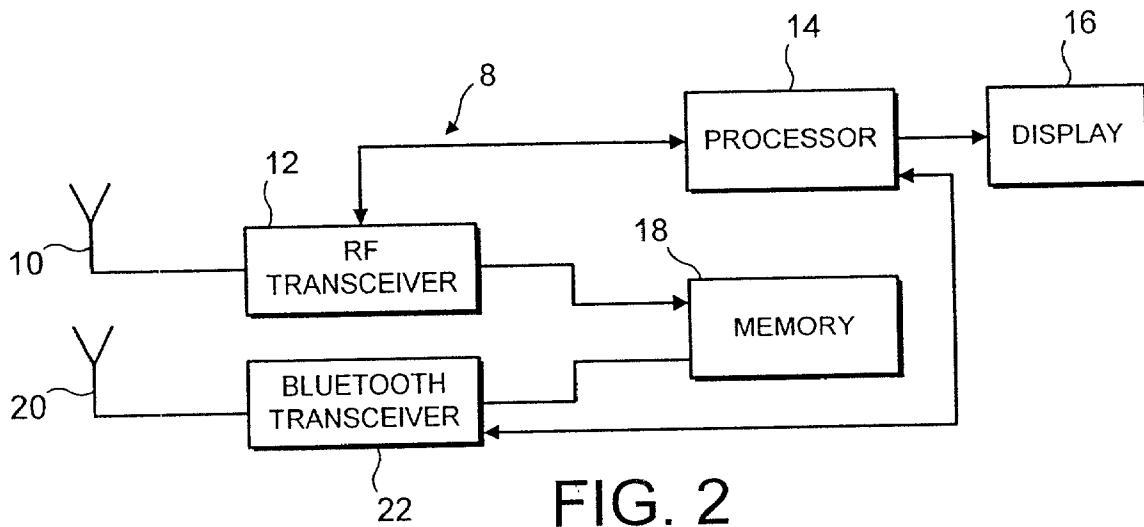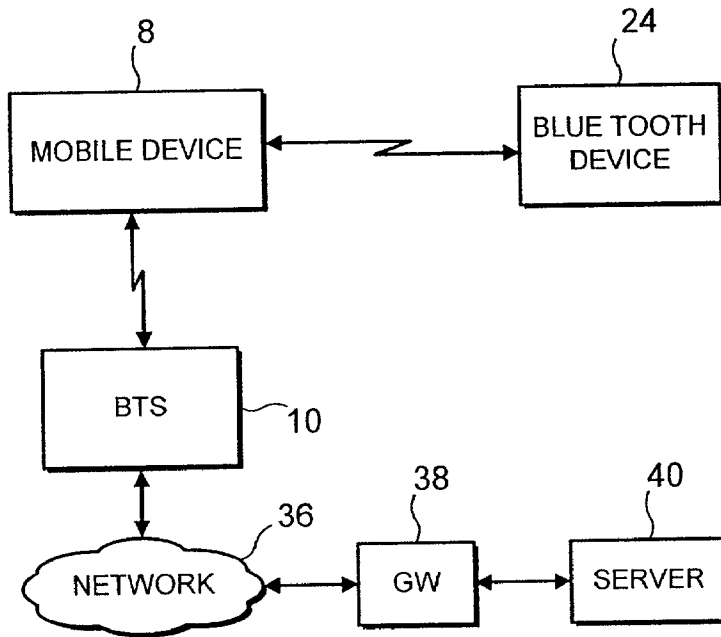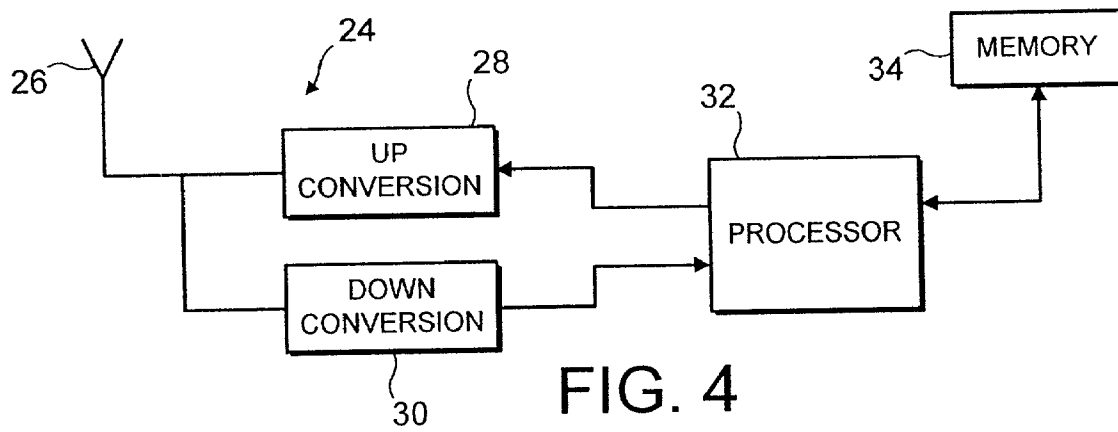
FIG. 1
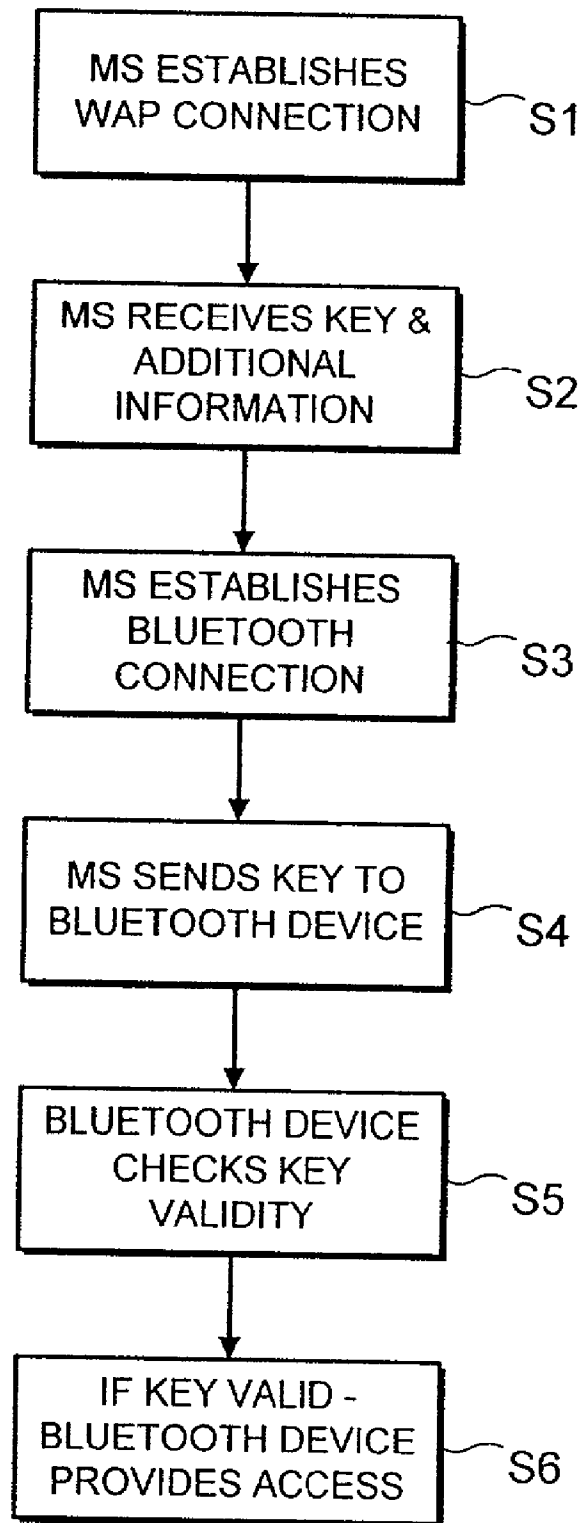

FIG. 2

FIG. 3

FIG. 4

FIG. 5

DEVICES

[0001] The present invention relates to a device and in particular but not exclusively to a device which provides access to an entity.

[0002] Wireless cellular networks are known in which the area covered by the network is divided into a number of cells. Each cell is served by a base transceiver station. The base transceiver station is arranged to communicate with mobile stations in the cell associated with the base station. The mobile stations establish via the base station a connection with another user, a fixed line telephone or the Internet.

[0003] Programmable keys are known. For example, plastic cards with magnetic strips are used as keys to open locks to for example doors or the like. The use of such keys is disadvantageous in that different keys are provided to access different entities and therefore need to be carried by the user.

[0004] It has been proposed to allow multiple users access to the same entity. For example, a front door to an office may be accessed by a number of users or a hotel room may be accessed by different users at different times. It is necessary for the accessed entity to have a database or similar to keep a record of the authorised users. It is disadvantageous if a database or similar needs to be associated with the accessed entity. For example, in a hotel, to have a database associated with each lock would be costly.

[0005] It is an aim of embodiments of the present invention to address one or more of the problems discussed earlier.

[0006] According to a first aspect of the present invention there is provided an access device comprising means for receiving a key and validity information, wireless communication means for establishing a connection with another party, said wireless communication means being arranged to provide said key and said validity information to said another party, wherein if said key and said validity information are determined by the another party to be valid access is provided.

[0007] According to a second aspect of the present invention there is provided an access method comprising the steps of receiving a key and validity information, establishing a wireless connection with another party, providing said key and said time related information to said another party, and checking at said another party if said key and said time related information are valid and if so providing access.

[0008] For a better understanding of the present invention and as to how the same may be carried into effect, reference will now be made by way of example to the accompanying drawings in which:

[0009] FIG. 1 shows a schematic diagram of a cellular network;

[0010] FIG. 2 shows a block diagram of a mobile station embodying the present invention;

[0011] FIG. 3 shows a block diagram of the entities with which the mobile station communicates;

[0012] FIG. 4 shows the Bluetooth device of FIG. 3 in more detail; and

[0013] FIG. 5 illustrates the method embodying the present invention.

[0014] Reference is made to FIG. 1 which shows a cellular network 2. The area covered by the network 2 is divided into a plurality of cells 4. Three cells 4 are shown in FIG. 1. However, it should be appreciated that in networks there will typically be many more cells.

[0015] Each cell 4 has associated therewith a base transceiver station 6. Each base transceiver station 6 is arranged to receive signals from and send signals to mobile stations 8 in the cell associated with the base station 6. Depending on the method of communication, the mobile stations may communicate with the base stations of adjacent cells. In some embodiments of the present invention, a mobile station may be able to communicate with two or more base stations at the same time.

[0016] The mobile stations and base transceiver stations typically use radio frequency signals to communicate. The base stations and mobile stations may use a frequency division multiple access technique. This means that the available frequency spectrum is divided up into a number of bands and the mobile station will be allocated a given frequency to communicate with the base station with the base station being allocated another frequency to communicate with the mobile station. Generally, the frequencies will be different but this is not essential. The mobile stations and the base stations may use a time division multiple access technique. With this method, a frequency band is divided up into a number of time slots and a mobile station is allocated a given one of those time slots to communicate with the base station and vice versa. In the GSM (global system for mobile communication) standard, a combination of frequency division multiple access and time division multiple access is used. Spread spectrum techniques such as code division multiple access may also be used. In this technique, different spreading codes are used by different mobile stations so that the signals from the different mobile stations can be distinguished. Similarly, the different base stations will use different spreading codes. In the third generation system, a wideband CDMA system has been proposed. It should be appreciated that in embodiments of the present invention, any of these techniques may be used either on their own or together. It is of course possible that any other suitable techniques may be used.

[0017] Reference is now made to FIG. 2 which shows a block diagram of a mobile station embodying the present invention. The mobile station 8 has a first antenna 10. The first antenna 10 is arranged to receive signals from the respective base transceiver station 6. The first antenna 10 is also arranged to transmit signals to the base station 6.

[0018] The signals received by the first antenna 10 are forwarded to a radio frequency transceiver 12. The radio frequency transceiver 12 will down convert the radio frequency signals to a baseband frequency. The radio frequency transceiver may perform other functions such as decoding, demodulation or the like. The received information at the baseband frequency is forwarded by the radio frequency transceiver 12 to a processor 14 which extracts the necessary information from the received signal. The processor 14 may be arranged to provide an output which is connected to a speaker which may provide received voice signals. The processor 14 may receive control information from the base station which is used to control the mobile station or the like. The processor 14 may also extract information which is to

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS
Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.

fastcase®
Smarter legal research.