S86896

Certificate of Grant of a Patent

PATENTS ACT 1992
(as amended)

In accordance with Section 31 of the Patents Act, it is hereby certified that a patent bearing the specification number S86896 has been granted in respect of an invention under Part III of the Act, having the following particulars:

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An internet connected door lock device and web based management system

The current invention is a 'Smart lock' system which consists of a physical device which can be fitted to a doorway/entry point and a web-based management system.

The Smart Lock is an Internet connected device that can be fitted to existing doorways in a property that offers increased security and ease of use. The device will consist of a control unit fit inside a small housing that can be attached onto or near the door. The existing lock can remain on the door but will no longer be required as a solenoid lock will be filled to the door which will be controlled by the device. The device offers increased security as each time the door is opened the event is recorded. There is an incorporated CCTV system which can be viewed live at any time and an image is captured whenever an attempt (failed or successful) is made to open the door. The system is easy to use as there is no longer a possibility of losing a key as no physical keys are involved. The information stored on the system can be accessed anywhere using the web-based management system.

The physical device consists of:
a micro-controller (A03) which will control the various input electronic components (A07) including a pincode keypad, fingerprint scanner, switches and the various output electronic components (A06) including a solenoid lock and LED;
an internet connected Linux single board computer (A04) which will retrieve input (A09) from the CCTV camera and store a database of entry attempts and provide output (A08) in the form of a display of the CCTV images while storing a database of these images.

The micro-controller (A03) and Linux single board computer (A04) will communicate with each other using the premises local network (A01) which they will connect to using either an Ethernet or Wi-Fi connection. The device will communicate to an external web server (A05) using the local networks (A01) internet connection through the hosting company's network (A02). The web-based management system will be hosted on an external web server (A05).

The web-based management system allows the owner/authorised users to manage/control/monitor a single doorway/entry point or multiple doorways/entry points. The web-based management system which will retrieve the information it needs about each physical device from the database on the Linux single board computer that will be part of each device.

The physical device can be unlocked by registered users via a pincode keypad or fingerprint scanner. The device will record all entry attempts made on the device whether they are successful or not. The data that the device records with each attempt is as follows: the method used (pincode or fingerprint), the date and time when the attempt was made, the name of the user who was granted access or "Failed Attempt" if the attempt was unsuccessful and the system will also store a CCTV image at the time that the attempt was made. The owner/authorised users can view this data locally or remotely using the web-based management system to monitor and manage access to the property.

The owner/authorised users can view live a CCTV stream from the device using the web-based management system. This would allow them to monitor the doorway/entry point locally or from anywhere in the world. The system can also send SMS alerts to the owner in the event of five failed attempts within three minutes of each other (that is the default option) The system also offers customisable alerts e.g. when a specified user accesses the device, such as a child returning home from school.

The owner/authorised users can generate temporary pincodes for the device using the web-based management system. These temporary pincodes are used to allow once off entry for a specific purpose, the pincodes expire after a set period of time. The owner (Administrator) can change user pincodes, delete users, create new users, view a profile of each user (name, last time they accessed the device and how many times they have accessed the device) using the web-management system.

The owner (Administrator) can also change the authorised users who have access to restricted parts of the web-based management system such as entry logs and CCTV images using the web-management system.

Claims

1. An Internet connected door lock device and web based management system comprising:
a micro-controller (A03) which will control the various input electronic components (A07) including a pincode keypad, fingerprint scanner, switches and the various output electronic components (A06) including a solenoid lock and LED;
an internet connected Linux single board computer (A04) which will retrieve input (A09) from the CCTV camera and store a database of entry attempts and provide output (A08) in the form of a display of the CCTV images while storing a database of these images,
wherein:
the micro-controller (A03) and Linux single board computer (A04) will communicate with each other using the premises local network (A01) which they will connect to using either an Ethernet or Wi-Fi connection;
the device will communicate to an external web server (A05) using the local networks (A01) internet connection through the hosting company's network (A02) and the web-based management system will be hosted on an external web server (A05).

2. An Internet connected door lock device and web based management system as claimed in claim 1 wherein:
the web-based management system allows the authorised users to manage a single doorway/entry point or multiple doorways/entry points via the Linux single board computer (A04);
the physical device can be unlocked by registered users via a pincode keypad or fingerprint scanner (A07);
the authorised users can stream a live CCTV view from the physical device using the web-based management system;
the system can send SMS alerts to the owner in the event of five failed attempts at entry and provide customisable alerts when a specified user accesses the device, such as a child returning home from school;
and
the authorised users can generate temporary pincodes for the device using the web-based management system allowing once off entry, these pincodes expiring after a set period of time.

3. An Internet connected door lock device and web based management system as hereinbefore described with reference to the accompanying drawing.

Drawings

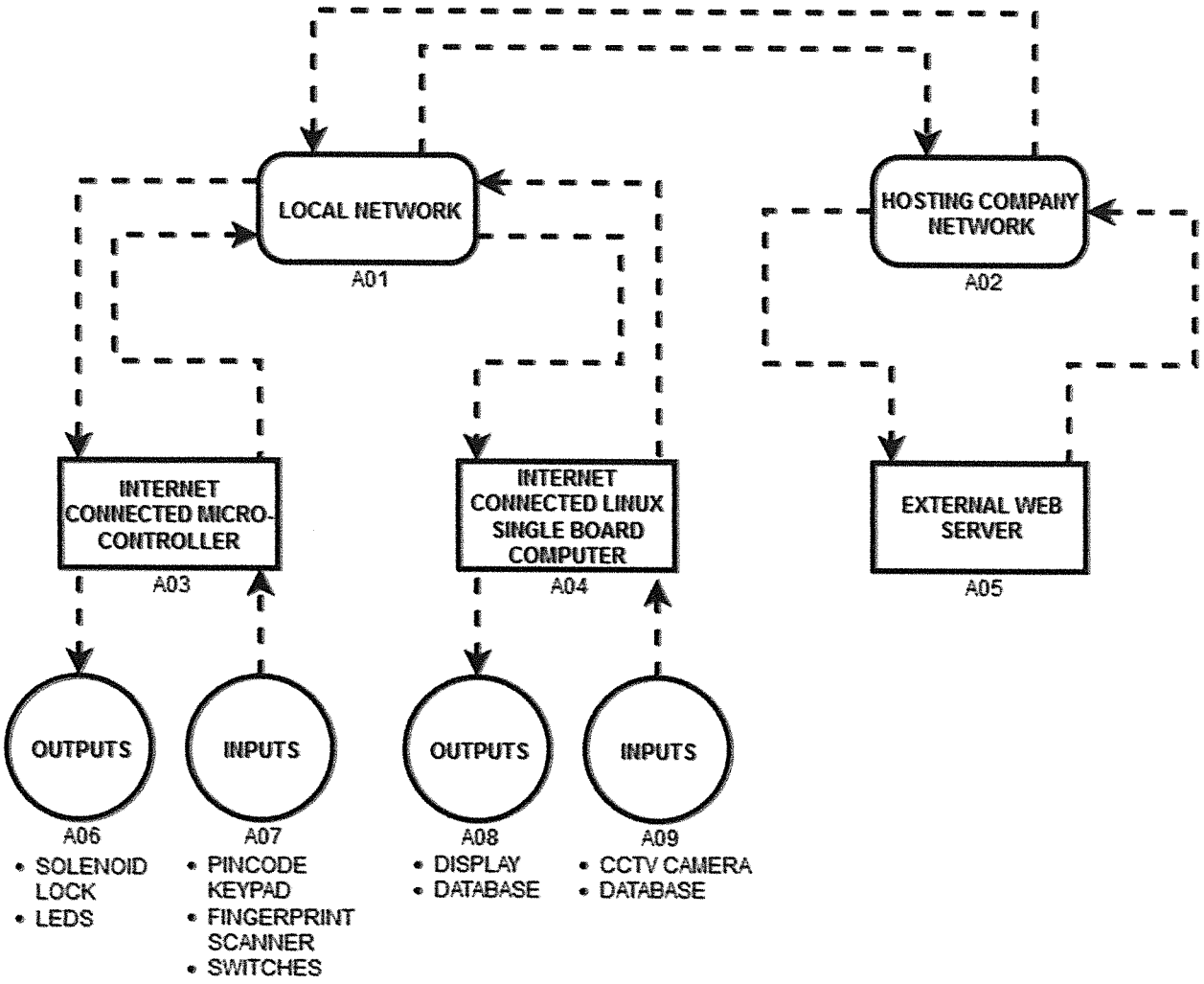

Fig. 1