(54) Titre : METHODE, APPAREIL DE DETECTION DE PRESENCE ET LEUR UTILISATION
(54) Title: METHOD, APPARATUS, AND USE OF PRESENCE DETECTION

(57) Abrégé/Abstract:
The system and method provide for a small, low-power device, e.g., a Bluetooth® device, in a carryable or wearable form, that allows a controlled device to respond to the presence of the user. The device may be worn on one's person and allow other
Abrégé(suite)/Abstract(continued):
devices, by means of Bluetooth® pairing and protocols, to detect the presence of a user. The controller or controlling device may emit a signal in the vicinity of the user to allow the controlled device to know whether or not the controlling device is present, and the signal may be a pulse of data that is transmitted every few seconds. The pulse of data between the transmitter and the receiver may be encrypted to be used for higher-security applications as a means of dual-factor authentication. The presence of the user may be employed to control a device, e.g., to control access to a computer, to unlock/lock doors, to turn lights on and off, and so on.
FIG. 2

WITHIN PROXIMITY

X < P

First Device / Controller or Controlling or Securing Device

Network Port

Second Device / Controlled or Secured Device

Second App / Controlled or Secured App

Controlled Circuit

Controlling Circuit
FIG. 10

CONTROLLED DEVICE

192
MEMORY BEARING COMPUTER READABLE
INSTRUCTIONS CAPABLE OF RECEIVING A
BROADCASTED SIGNAL FROM A CONTROLLER

194
MEMORY BEARING COMPUTER READABLE
INSTRUCTIONS CAPABLE OF TRANSMITTING A
SIGNAL CORRESPONDING TO A PAIRING SECURITY
LEVEL REQUIRED TO PAIR WITH THE CONTROLLED
DEVICE

196
MEMORY BEARING COMPUTER READABLE
INSTRUCTIONS CAPABLE OF DETERMINING IF THE
CONTROLLER AND THE CONTROLLED DEVICE HAVE
ESTABLISHED A PRIOR PAIRING RELATIONSHIP

198
MEMORY BEARING COMPUTER READABLE
INSTRUCTIONS CAPABLE OF, IF THE
CONTROLLER AND CONTROLLED DEVICE HAVE
ESTABLISHED A PRIOR PAIRING RELATIONSHIP, REESTABLISHING A PAIRING
RELATIONSHIP AND CAUSING THE CONTROLLED DEVICE TO ENTER A FIRST OPERATING
MODE

190
PROCESSOR

MEMORY BEARING COMPUTER READABLE INSTRUCTIONS
CAPABLE OF, AFTER
ESTABLISHING A PAIRING
RELATIONSHIP BUT UPON THE
ABSENCE OF A RECEIVED
BROADCASTED SIGNAL FROM
THE CONTROLLER, CAUSING
THE CONTROLLED DEVICE TO
ENTER A SECOND OPERATING
MODE

MEMORY BEARING COMPUTER READABLE INSTRUCTIONS
CAPABLE OF, IF THE
CONTROLLER AND
CONTROLLED DEVICE HAVE
NOT ESTABLISHED A PRIOR
PAIRING RELATIONSHIP,
ATTEMPTING TO ESTABLISH A
PAIRING RELATIONSHIP AND IF
SUCCESSFUL CAUSING THE
CONTROLLED DEVICE TO
ENTER A FIRST OPERATING
MODE
FIG. 11

CONTROLLER

212 MEMORY BEARING COMPUTER READABLE INSTRUCTIONS CAPABLE OF GENERATING A SEQUENTIAL SERIES OF SIGNALS

214 MEMORY BEARING COMPUTER READABLE INSTRUCTIONS CAPABLE OF DETERMINING IF THE CONTROLLER AND A CONTROLLED DEVICE HAVE ESTABLISHED A PRIOR PAIRING RELATIONSHIP

216 MEMORY BEARING COMPUTER READABLE INSTRUCTIONS CAPABLE OF, IF THE CONTROLLER AND CONTROLLED DEVICE HAVE ESTABLISHED A PRIOR PAIRING RELATIONSHIP, REESTABLISHING THE PAIRING RELATIONSHIP

218 MEMORY BEARING COMPUTER READABLE INSTRUCTIONS CAPABLE OF RECEIVING A TRANSMITTED SECURITY LEVEL CORRESPONDING TO A PAIRING SECURITY LEVEL REQUIRED TO PAIR WITH THE CONTROLLED DEVICE, AND ESTABLISHING A PAIRING RELATIONSHIP AT A PAIRING SECURITY LEVEL MATCHING OR GREATER THAN THE TRANSMITTED SECURITY LEVEL
MEMORY BEARING COMPUTER READABLE INSTRUCTIONS CAPABLE OF RECEIVING A BROADCASTED SIGNAL FROM A CONTROLLED DEVICE, THE BROADCASTED SIGNAL INCLUDING A DEVICE ADDRESS AND A PAIRING SECURITY LEVEL REQUIRED TO PAIR WITH THE CONTROLLED DEVICE

MEMORY BEARING COMPUTER READABLE INSTRUCTIONS CAPABLE OF CREATING A PAIRING RELATIONSHIP WITH A CONTROLLED DEVICE, THE PAIRING RELATIONSHIP HAVING A PAIRING SECURITY LEVEL MATCHING OR GREATER THAN THAT REQUIRED BY THE CONTROLLED DEVICE
FIG. 1

(A) WITHIN PROXIMITY $X < P$

FIRST DEVICE / CONTROLLER / CONTROLLING OR SECURING DEVICE

SECOND DEVICE / CONTROLLED OR SECURED DEVICE

(B) OUTSIDE PROXIMITY $X > P$

FIRST DEVICE / CONTROLLER / CONTROLLING OR SECURING DEVICE

SECOND DEVICE / CONTROLLED OR SECURED DEVICE