

(54) Title of the invention : SECURE CODE EXCHANGE METHOD FOR GROUP KEY MANAGEMENT PROTOCOL IN WIRELESS BODY AREA NETWORKS (WBAN)

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## (57) Abstract :

The emerging wireless body area networks (WBANs) have extraordinary potential for the advancement and development of future pervasive healthcare systems. Wearable and implantable sensors are used for gathering the physiological information to accomplish persistently monitoring of an individuals physical conditions. Several various tiny wireless sensors deliberately positioned on the human body create a WBAN that can screen different vital signs, providing continuous feedback to the user and clinical workforce. However, due to the use of unreliable wireless media, WBANs are exposed to an assortment of assaults. Thus, critical security devices are required to allow a guarded WBAN. Regarding the above issues, in this invention, the new working WBAN system model with group message broadcasting is assembled. In this manner, a protected and expert group key management protocol with a cooperative sensor assistance is recommended. In the proposed protocol, the Chinese remainder theorem (CRT) is operated for group key management among the personal controller (PC) and Healthcare centre (HC), which further supports batch key updating. The recommended sensor affiliation plot is propelled by a coded cooperative data exchange (CCDE).

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