A Secret Handshake Scheme for Mobile-hierarchy Architecture based Underground Emergency Response System

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   (Pt9)Abstract—**Wireless Sensor Networks (WSNs) is one of the most important solutions for emergency applications, such as fire, flood and volcano monitoring, especially underground disasters. In this paper, we propose a mobile-hierarchy WSN architecture for underground emergency response system and a secure handshake scheme for the mobile-hierarchy architecture. In the discussions, the proposed secret attribute handshake scheme verifies the legitimacy of a node over an insecure wireless communication channel and accomplish the secret attributes negotiation. Mobile-hierarchy WSN architecture is evaluated in underground emergency response system by experiments. It shows good efficiency by extensive simulations in special emergency scenario. Moreover, it enables a new efficient solution to underground emergency response system.**

   (Pt9)Keyword—**Underground emergency response system, secret handshake, mobile-hierarchy WSN**

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