

Lightweight and Seamless Distributed Scheme for the Smart Home

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Abstract : Security of the smart home in terms of behavior activity pattern recognition is a totally dissimilar and unique issue as compared to the security issues of other scenarios. Sensor devices (low capacity and high capacity) interact and negotiate each other by detecting the daily behavior activity of individuals to execute common tasks. Once a device (e.g., surveillance camera, smart phone and light detection sensor etc.) is compromised, an adversary can then get access to a specific device and can damage daily behavior activity by altering the data and commands. In this scenario, a group of common instruction processes may get involved to generate deadlock. Therefore, an effective suitable security solution is required for smart home architecture. This paper proposes seamless distributed Scheme which fortifies low computational wireless devices for secure communication. Proposed scheme is based on lightweight key-session process to uphold cryptic-link for trajectory by recognizing of individual's behavior activities pattern. Every device and service provider unit (low capacity sensors (LCS) and high capacity sensors (HCS)) uses an authentication token and originates a secure trajectory connection in network. Analysis of experiments is revealed that proposed scheme strengthens the devices against device seizure attack by recognizing daily behavior activities, minimum utilization memory space of LCS and avoids network from deadlock. Additionally, the results of a comparison with other schemes indicate that scheme manages efficiency in term of computation and communication.

Keywords : authentication, key-session, security, wireless sensors

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