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Patent Search

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Abstract:

[029] The present invention relates to an integrated IoT security framework for smart home devices. The framework comprises several key modules such as robust Device Authentication Module, enforcing strict device verification, and multi-factor authentication. End-to-End Encryption guarantees secure data transmission, while the Access and Permissions Module empowers users to define access policies. Regular Device Patching and Updates keep vulnerabilities at bay, and the Network Monitoring and Detection Module provides real-time threat identification. Further, the Incident Response and Recovery Module ensures swift responses to potential breaches. Privacy defenses user data, while the Third-Party Device Assessment Module ensures the integration of only secure devices into the ecosystem. Accompanied Drawing [FIG. 1

Complete Specification

Description:[001] The invention, in general, relates to internet of Things (IoT) systems and technologies. More specifically, the present invention relates to an Integrated Security Framework for Smart Home Devices.

BACKGROUND OF THE INVENTION

[002] The following description provides the information that may be useful in understanding the present invention. It is not an admission that any of the information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

[003] In recent years, the rapid proliferation of Internet of Things (IoT) devices has revolutionized the way we interact with technology, particularly within the context of smart homes. Smart home devices, including smart thermostats, security cameras, voice assistants, and more, have become increasingly popular for their convenience, energy efficiency, and automation capabilities. These devices enable homeowners to control various aspects of their living spaces remotely, enhancing comfort and security.

[004] However, with the widespread adoption of IoT devices, concerns about security and privacy have grown significantly. Smart home devices are susceptible to vulnerabilities and cyber threats due to their constant connectivity to the internet and the exchange of sensitive data. Unauthorized access, data breaches, and privacy infringements are just a few of the risks associated with insecure IoT ecosystems.

[005] To address these security challenges, an integrated IoT security framework personalized for smart home devices becomes essential. Such a framework aims to provide comprehensive protection against potential threats while ensuring the seamless operation of these devices. It encompasses various layers of security, including device authentication, data encryption, network monitoring, and user awareness, to safeguard smart homes effectively.

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