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ENHANCED SECURITY FRAMEWORK FOR GRAY-HOLE ATTACK PREVENTION IN VEHICULAR NETWORKS

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ABSTRACT

This research proposes an innovative and efficient approach for the detection and prevention of Gray-Hole attacks in Vehicular Ad Hoc Networks (VANETs). Gray-Hole attacks pose a significant threat to the reliability and security of VANETs by selectively dropping or modifying network packets. Our approach employs a combination of anomaly detection techniques and dynamic trust management to identify suspicious nodes exhibiting abnormal behavior indicative of Gray-Hole attacks. Upon detection, a proactive prevention mechanism is triggered to isolate and mitigate the impact of compromised nodes. The proposed solution is implemented in Network Simulator 2 (NS 2) using Tcl programming language, demonstrating its feasibility and effectiveness in enhancing the resilience of VANETs against Gray-Hole attacks. The results showcase improved network performance and security, making our approach a valuable contribution to the field of VANET security.

INTERNAL EXAMINER **EXTERNAL EXAMINER**