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### **RESEARCH ARTICLE**

# **A WIRELESS MESH NETWORKS WITH RELIABLE AND RESILIENT ROUTING BY CROSS-LAYER METRICS**

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#### **ABSTRACT:**

*A Novel routing metric, Expected Forwarded Counter (EFW) to cope with a problem of selfish behavior (packet dropping) of mesh routers in a Wireless Mesh Networks (WMN). Wireless Mesh Networks emerged as a flexible and low cost network infrastructure, where heterogeneous mesh routers managed by different users collaborate to extend network coverage. EFW combines routing Layer observations of forwarding behavior with MAC Layer measurements of wireless link quality to select the most reliable and high performance path. The proposed metrics will be evaluated through both simulations and real-life deployments on two different wireless testbeds, performing a comparative analysis with On Demand Secure Byzantine Resilient Routing (ODSBR) Protocol and Expected Transmission Counter (ETX). Cross Layer metrics accurately capture the path reliability and Even when a high percentage of network nodes misbehave it increase the WMN performance.*

*Keywords-Routing metrics, Wireless Mesh Networks, Selfish behavior, wireless testbed*

Full Text: <http://www.ijcsmc.com/docs/papers/March2014/V3I3201466.pdf>