

# Research on Cross-Layer Design in MANETs (Mobile Ad-hoc Networks)

P.Suwathi<sup>1</sup>, C. Kanagalakshmi<sup>2</sup>, O. Sheela<sup>3</sup>

Assistant Professor, Computer Science and Engineering<sup>1,2,3</sup>

Thangavelu Engineering College, Chennai, India

**Abstract:** *Cross-layer design in Mobile Ad-hoc Networks (MANETs) refers to the intercommunication and exchange of information across different protocol layers to improve overall network performance. In a typical networking protocol stack, each layer operates independently, but in MANETs, the traditional layer-by-layer communication model is often not enough due to the dynamic nature of wireless communication, limited resources, and fluctuating network conditions. Therefore, cross-layer design has become a vital research area to optimize the efficiency and performance of MANETs..*

**Keywords:** MANET(Mobile Ad-hoc network), Layers, Protocol Stack, Dynamic Topology, Cross-layer design