**An Efficient and Robust Addressing Protocol for Node Auto configuration in Ad Hoc Networks**

**ABSTRACT:**

Address assignment is a key challenge in ad hoc networks due to the lack of infrastructure. Autonomous addressing protocols require a distributed and self-managed mechanism to avoid address collisions in a dynamic network with fading channels, frequent partitions, and joining/leaving nodes. We propose and analyze a lightweight protocol that configures mobile ad hoc nodes based on a distributed address database stored in filters that reduces the control load and makes the proposal robust to packet losses and network partitions. We evaluate the performance of our protocol, considering joining nodes, partition merging events, and network initialization. Simulation results show that our protocol resolves all the address collisions and also reduces the control traffic when compared to previously proposed protocols.