MULTI-CHANNEL MAC PROTOCOL

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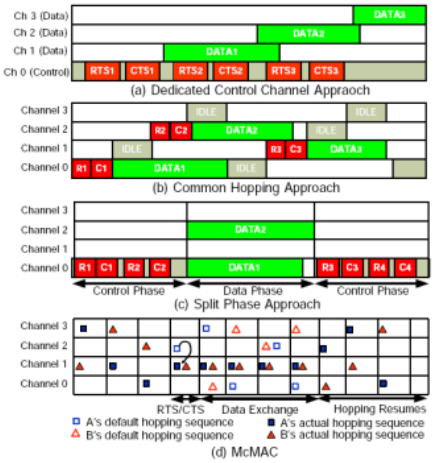
Introduction

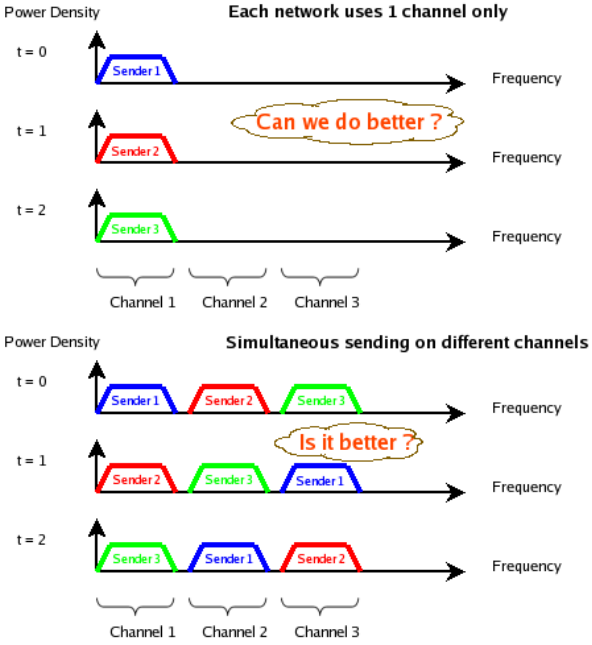
Widely used wireless technologies, such as IEEE 802.11, provision for multiple frequency-separated channels in the available frequency spectrum. In that manner, other channels are leaved unused while the selected channel becomes congested with number of users increase. A MAC protocol that can exploit all the available channels is an emerging issue in multi-hop wireless network.

Approaches



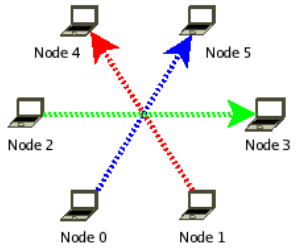
Issues

How to utilize all the available channels to provide more bandwidth, low delay service in wireless network ?



Simulation

This is a simulation with Dedicated Control Channel



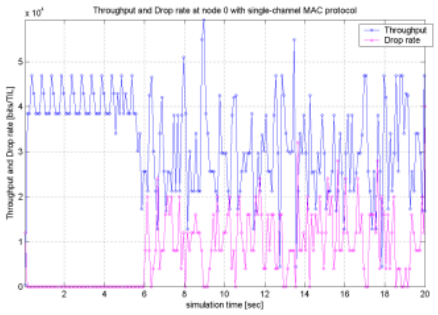
Future Research

This simulation result show that multi-channel MAC protocol can provide more bandwidth with low frame loss to wireless nodes in crowded environment.

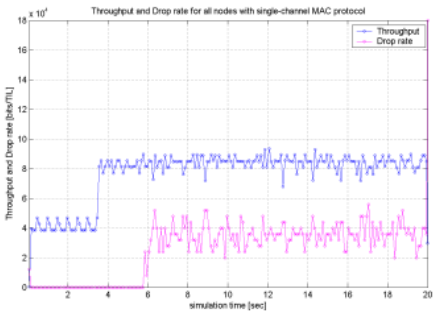
The next research will be:
- Evaluate other multi-channel MAC approachs
- Develope routing protocol that can gain advantages of multi-channel communication
- Resource provision for multi-channel wireless mesh network

Results

Single channel MAC | **Multi-channel MAC**



The Blue flow



Total of the 3 flows