

MultHop Routing: *just say no*

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- Enologically enhanced

- May not represent the opinion of Intel Corp

Multi Hop Routing

- Great research Topic
 - Like IP Multicast and QoS/CoS
 - At least a decade of PhD theses
- You [almost] never really need it
 - Did GDI use it? No...
- Problems:
 - It isn't so easy
 - Leads to differences in node power drain
 - More variability of node resource utilization

Look to Another Network

- Notice what the Cell Network Does
 - No multi-hop
 - Base stations are much fancier than handsets:
 - Antenna diversity
 - Power management (for CDMA at least)
 - Maybe can even do macrodiversity and beam forming
 - Base Stations Expensive, Handsets cheap

What To Do

- Bag on multip-hop routing
- Develop Much fancier base stations
 - Orthogonal OFDM or FH codes for each node
 - Diversity combining on antennas
- Do Other Stuff like cell base stations
 - Power allocation, TDM schedules, CDMA (or CDMA)

What We're Doing

- Frequency Hopping Component
 - Chipcon radio provides a sort of “double buffering” frequency hopping capability
 - We should be able to do cool stuff with this
- Examples:
 - Orthogonal FH sequences as fn of GID
 - [maybe] multi-receiver at Base Station
 - No interference, no worries

One More Rant

- Localization and Time Sync
 - Didn't UWB actually solve this problem already? (Answer: Yes)
 - How can you possibly do a good job with sinusoidal transmissions? (Answer: you can't)
- Just do UWB and be done with this.