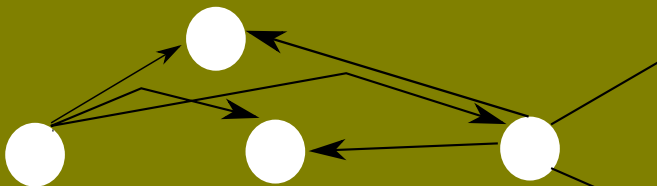# Count on me: Lightweight Ad-Hoc Broadcasting in Heterogeneous Topologies

C. Ellis, H. Miranda and F. Taïani
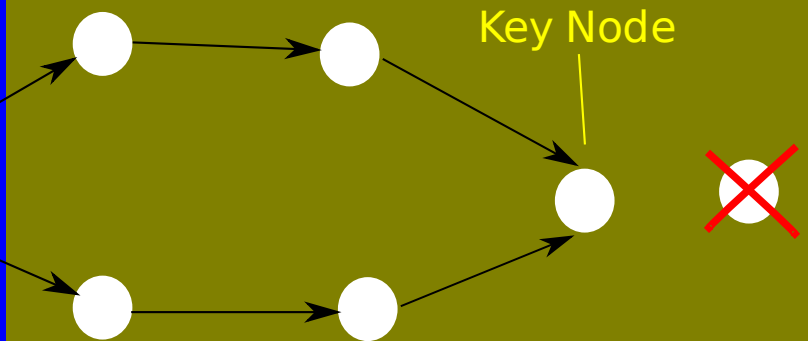
PAMPA Broadcast Algorithm

After receiving a message nodes:
1. Set a timer proportional to RSSI
2. While waiting counts retransmissions
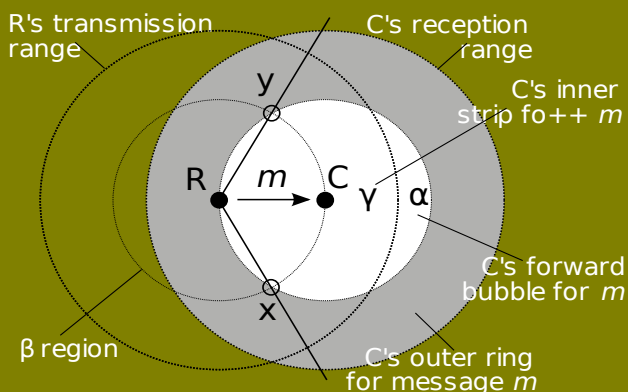3. Retransmit if not enough retransmissions where listened

Overcancellation

- Messages may follow concurrent paths
- Nodes receiving from different path will not retransmit
- Absense of retransmission may cancel propagation on key nodes

Key Node

Avoiding Overcancellation

- Try to infer direction of message propagation (assuming location information is unavailable)
- Retransmit if all retransmissions arrive from the same direction
- i.e. -
Ignore (don't count) some retransmissions

To count or not to count...

Common Parent (CP): Don't count if retransmissions have differen parents (retransmitter before the last)

Directional Look-Ahead (TH): C counts retransmissions from gray region only

R's transmission range
C's reception range
C's inner strip fo++ *m*
y
R *m* C γ α
x
C's forward bubble for *m*
β region
C's outer ring for message *m*

Angular Look-Ahead (ATH): C counts retransmissions from α and γ

Does It Help?

	PAMPA	ATH/CP	ATH	CP	Control

Average delivery ratio
Runs with delivery ratio above 90%