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DIGITAL SOLUTIONS FOR SMART CITIES (BLG 556E)

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Cooperative Communication Topologies for Smart City IoT Appliances

1. Problem Description

Currently, destructive impacts of channel as fading, scattering and shadowing degrades communication quality for Smart City IoT appliances with mobility support. Hence, this results in bad communication quality either longer delay, jitter and throughput.

2. Proposal

Appliance of cooperative communication would eliminate mentioned problems given in Problem Description.

Usage of cooperative communication for smart city appliances increases throughput, decreases delay & jitter preserving better energy efficiency. Figure 1 gives the most basic model of cooperative wireless communication where we will study complex cases like N end devices exist in the network and T of them are active. Here the problem is; utilization of N-T idle wireless devices to achieve best service quality for selected users or system in a mesh network topology.

In this study we'll study different protocols providing fairness and best quality with the help of simulations.
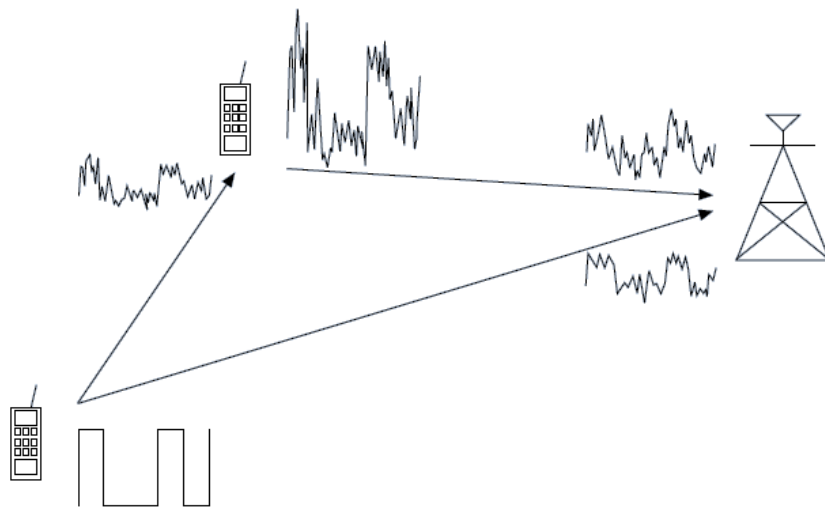

Figure 1 - Cooperative Communication Basic Model