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Bachelor's/Master's Thesis

Resilient Acknowledgement Design with and without Emulation

Abstract

Network Coding requires end-to-end acknowledgements. In multi-hop networks normally, an acknowledgement has to be forwarded over multiple nodes. In a wireless network, however, a resilient low-rate ACK can be received at a larger distance. Those ACK can be emulated via existing radios (e.g. cross-technology communication).

Content

Goal of this thesis is develop a resilient ACK. This shall be evaluated in simulations and experiments. Interest of study is the transmission time in comparison with the bandwidth and the robustness of the signal. Next to standard WiFi, LoRa, raw CSS and DSSS as well as methods like ELORA and emulations shall be studied. A theoretical study on multi-hop transmission shall be included.

Requirements

* Interests simulations and experimental work
* Interests in MATLAB
* Interests in learning signal processing
* Interests in statistics
* Interests in modulation and spreading
* Scientific work

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