Simulator for Adaptive Multimedia Delivery over Wireless Networks

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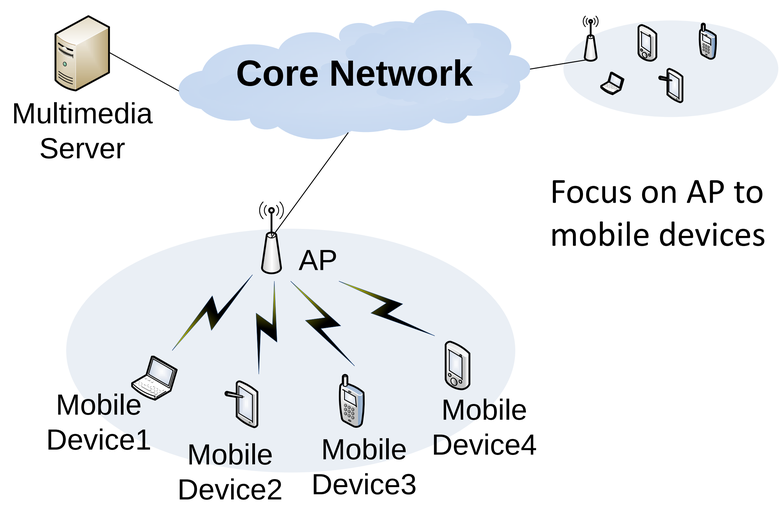
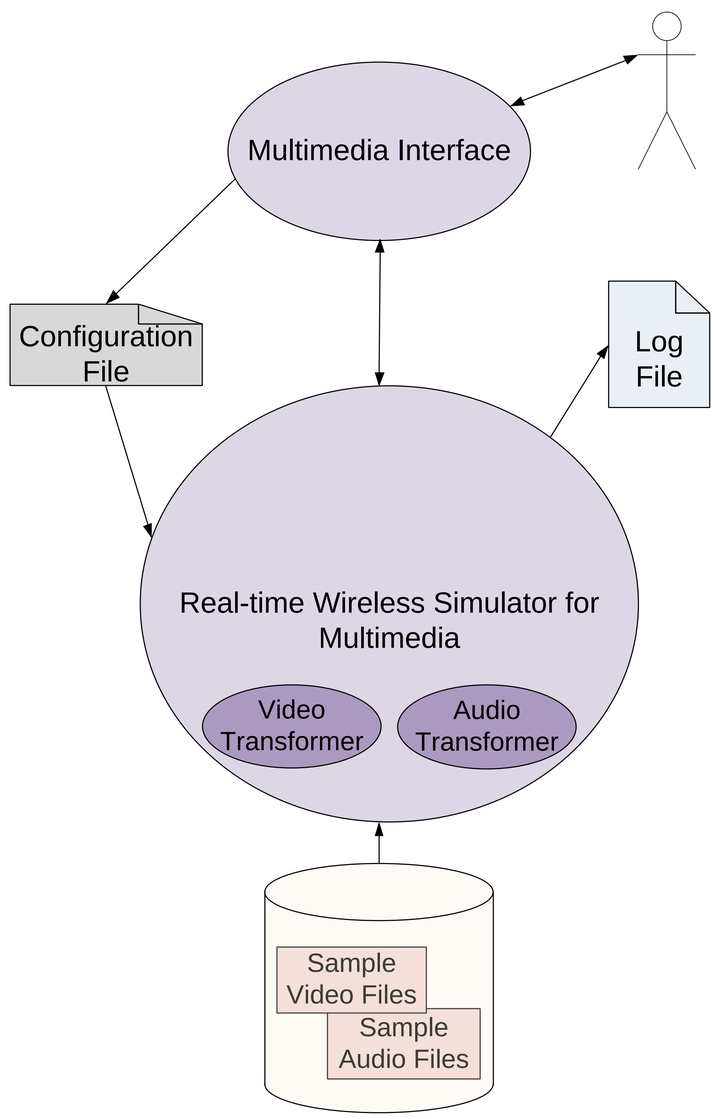
Motivation

Build a simulator and tool that can illustrate the impact of wireless transmission on video and audio delivery.

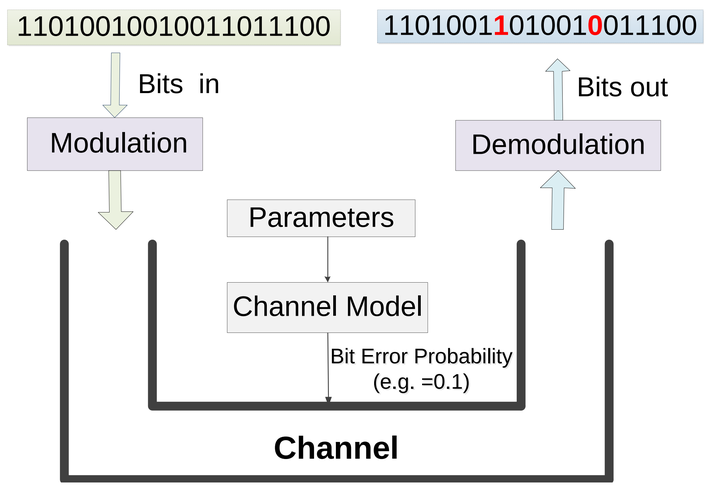
Simulation Scenario



Simulator Architecture



Bit Error Simulation— Physical Layer



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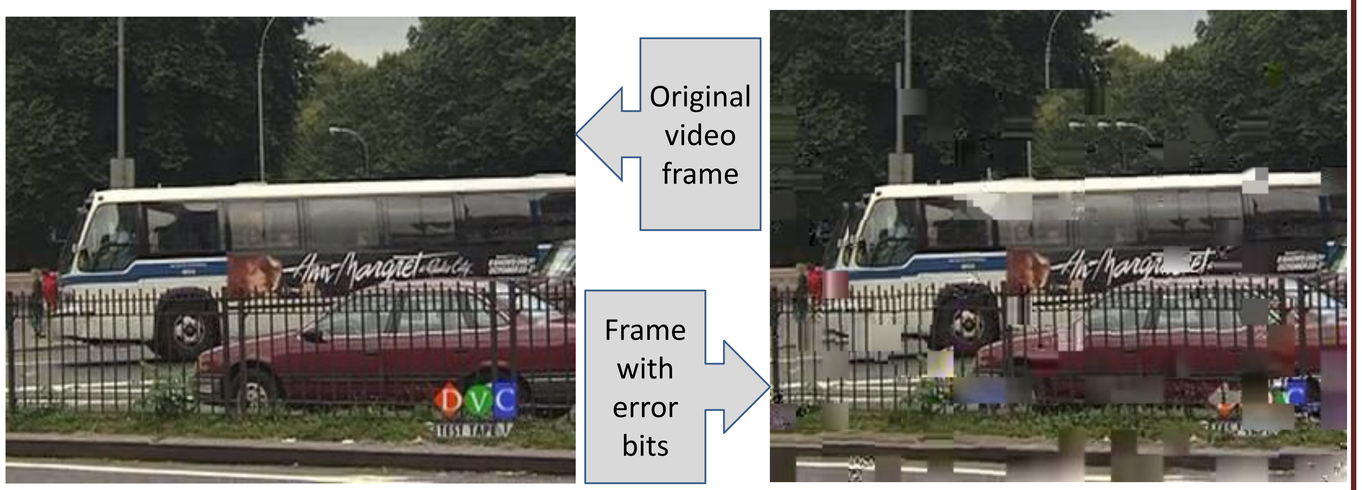
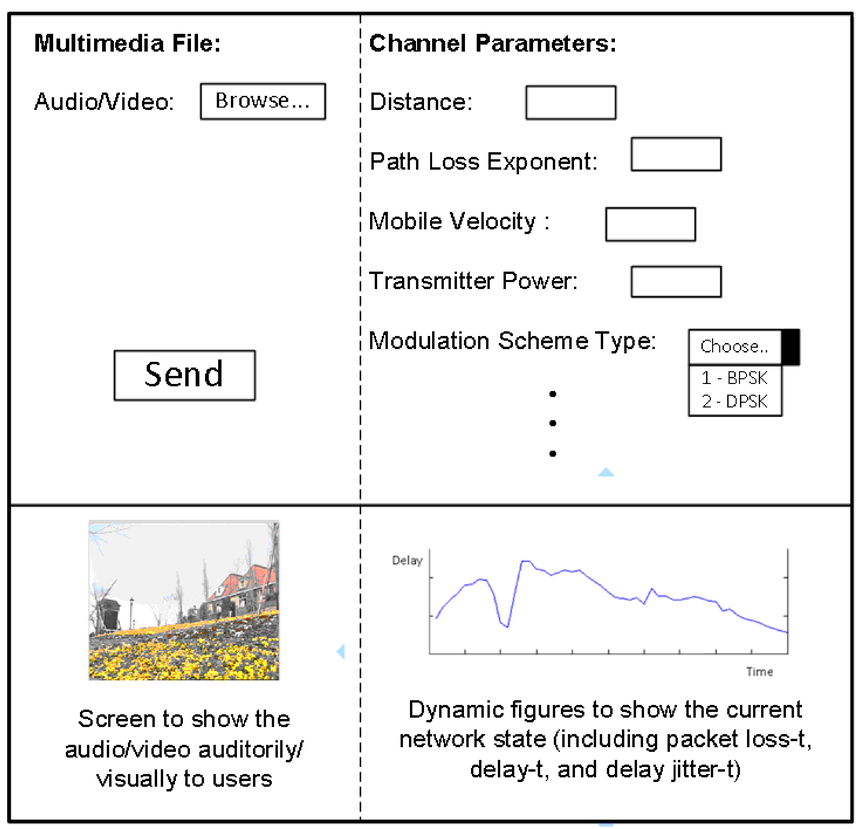
Video Comparison



Simulator GUI



Operation Steps:

(1) Define channel parameters
(2) Choose compressed (e.g. H.264) audio/video files from local library
(3) Click "Send".

Display:

(1) Dynamic figures to show current network state
(2) Transmitted audio/video.

Sample Path Loss Exponent

Environment	Path Loss Exponent
Free space	2
Urban area cellular radio	2.7 to 3.5
Shadowed urban cellular radio	3 to 5
In building line-of-sight	1.6 to 1.8