

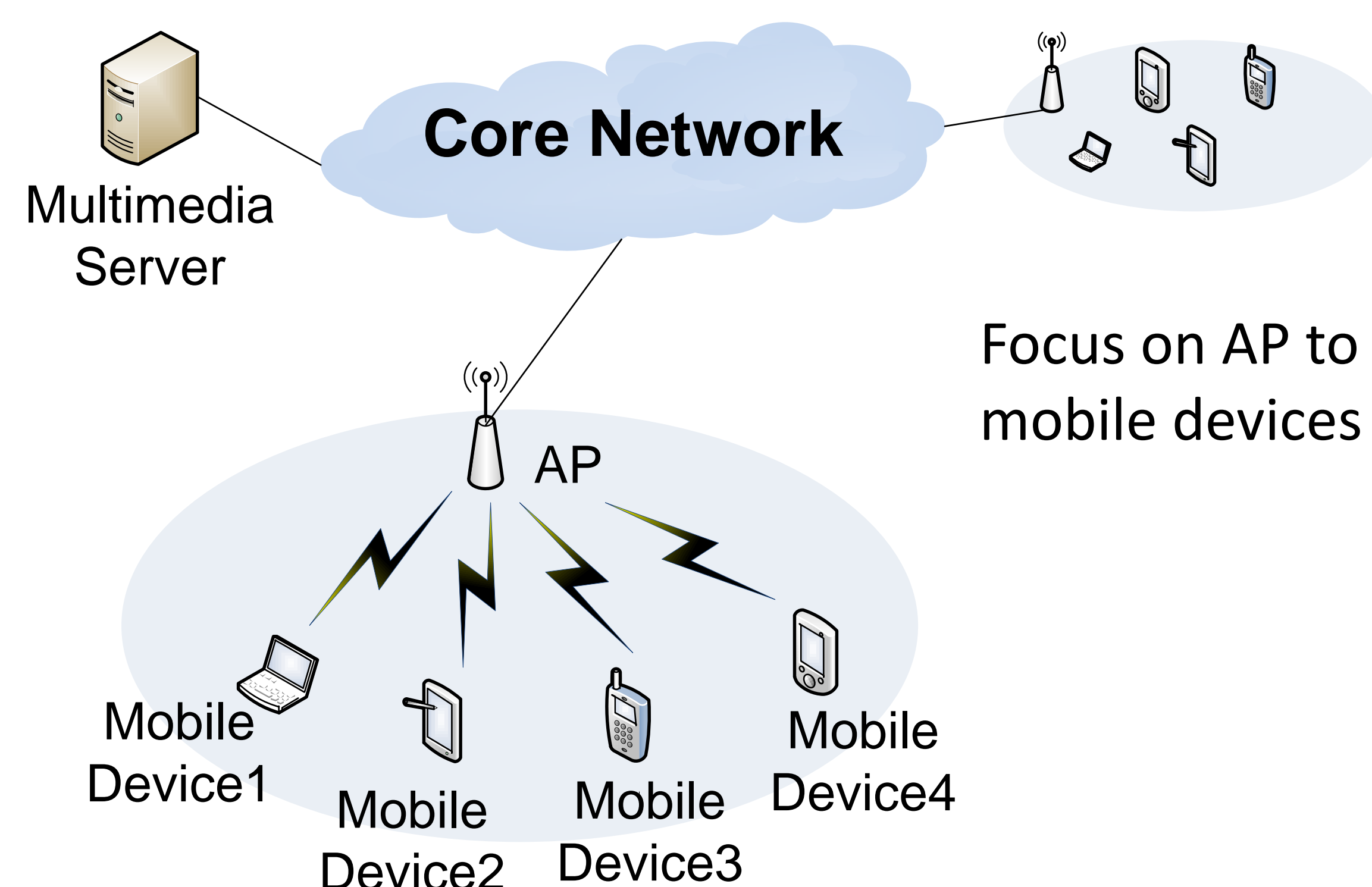
# Simulator for Adaptive Multimedia Delivery over Wireless Networks

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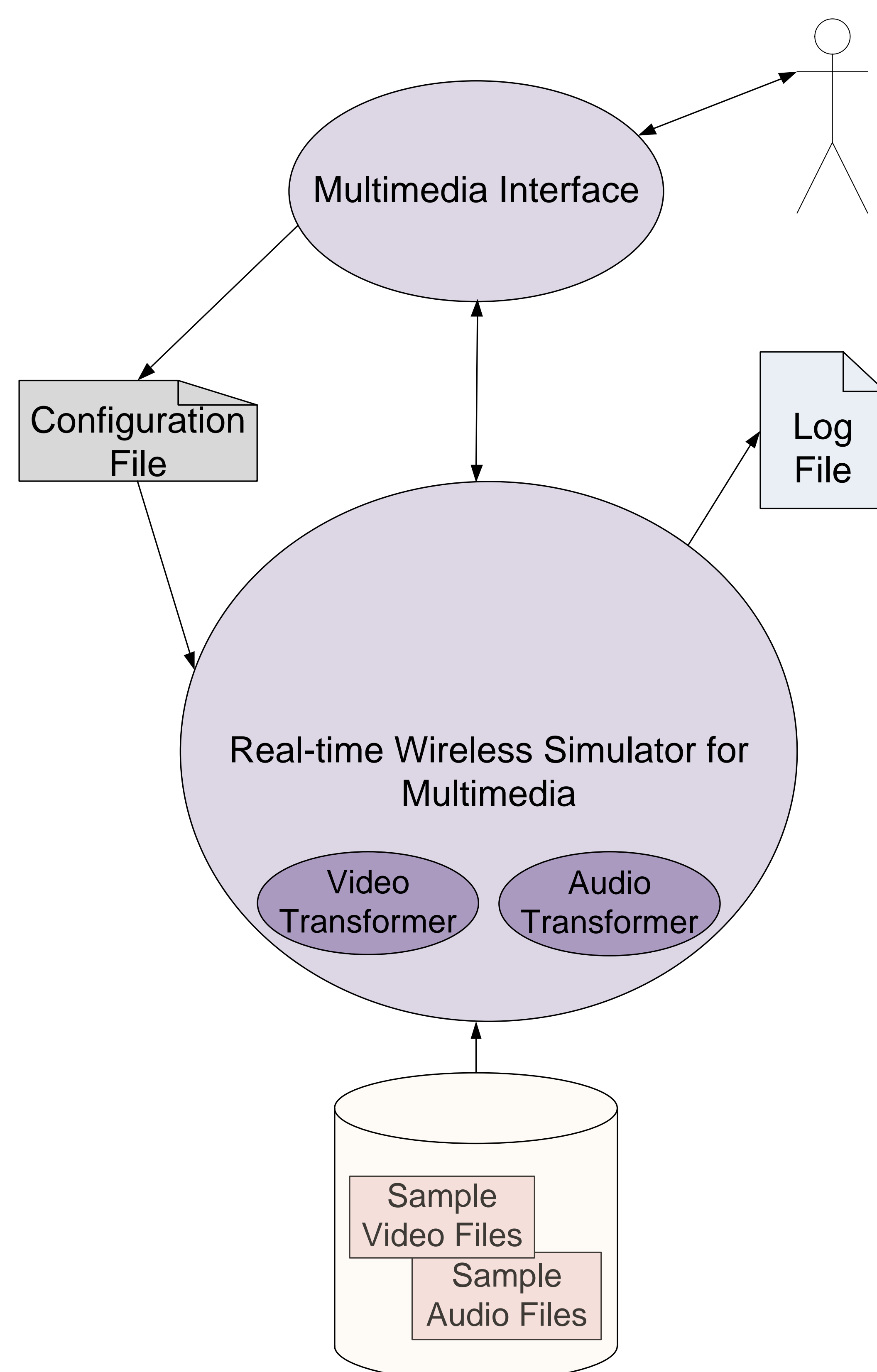
## Motivation

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

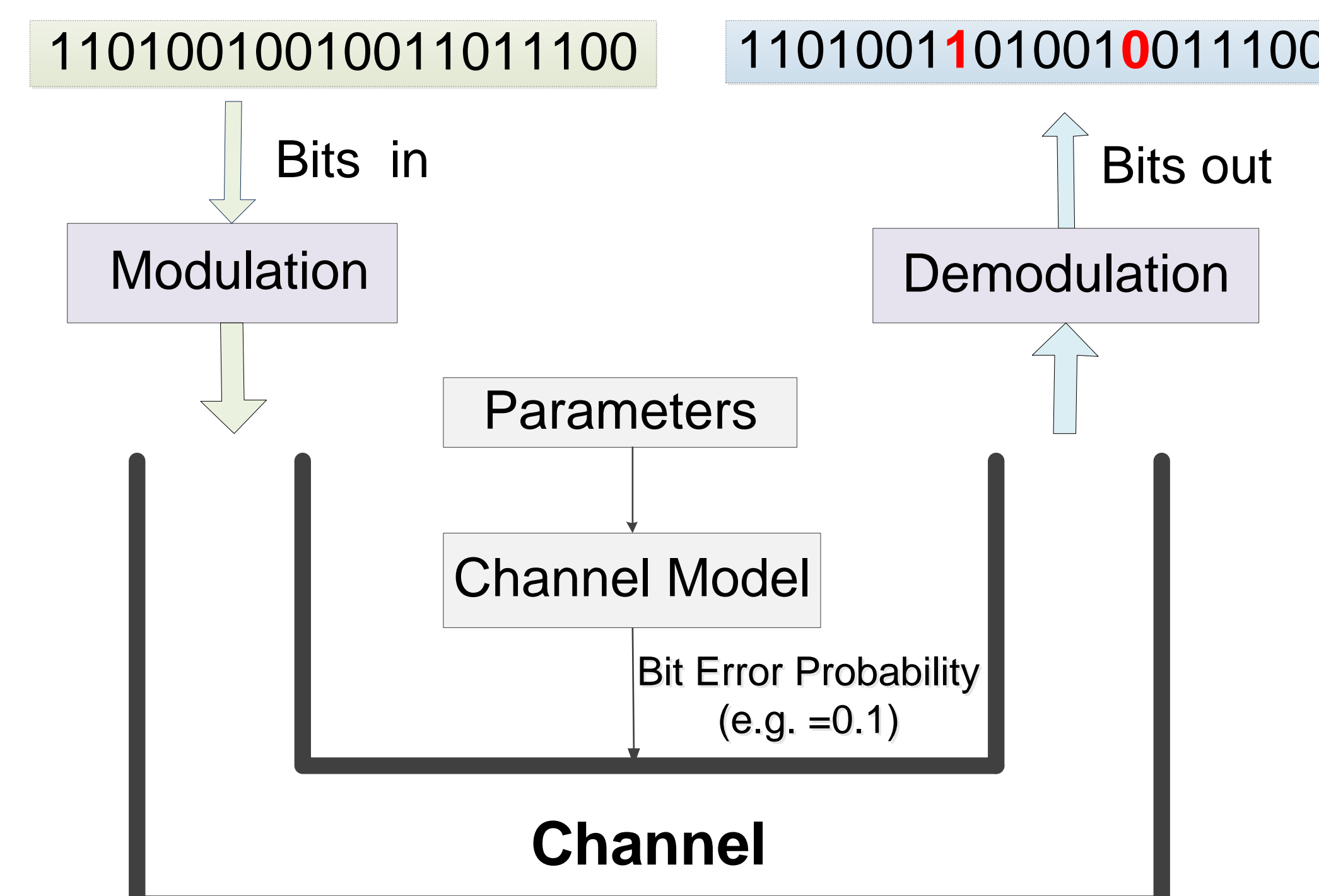
## Simulation Scenario



## Simulator Architecture



## Bit Error Simulation— Physical Layer



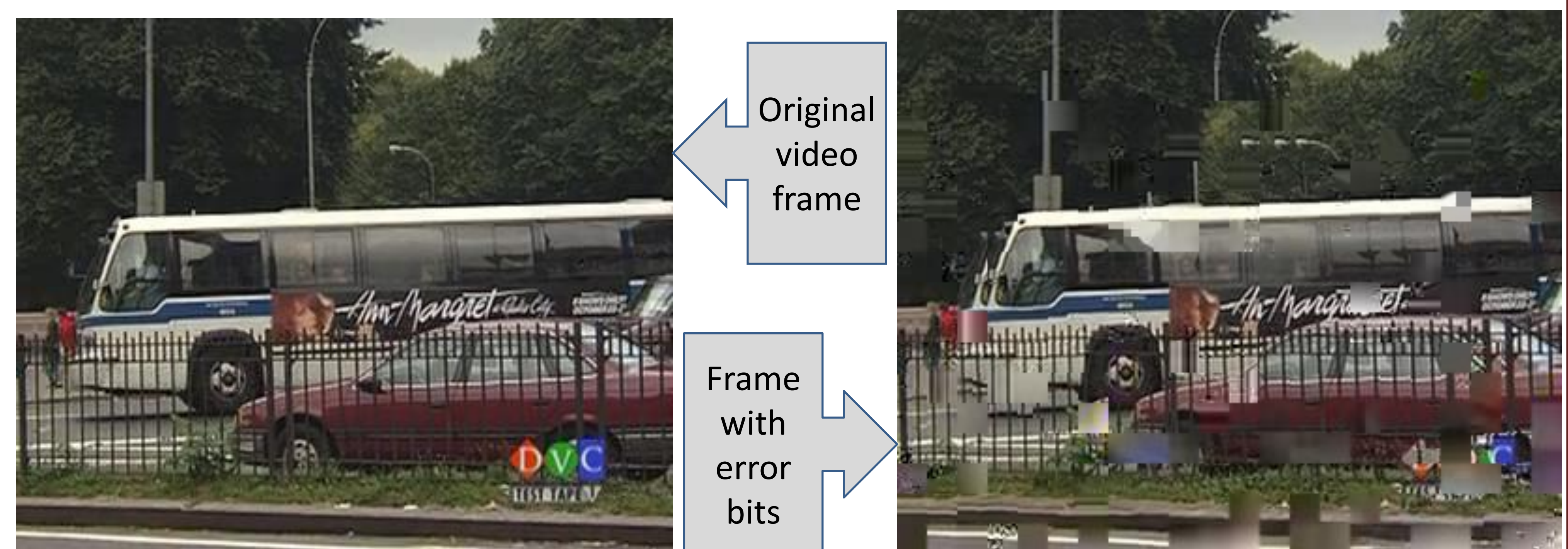
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## Video Comparison



## Simulator GUI

**Multimedia File:**  
Audio/Video:

Screen to show the audio/video auditorily/visually to users

**Channel Parameters:**  
Distance:   
Path Loss Exponent:   
Mobile Velocity:   
Transmitter Power:   
Modulation Scheme Type:   

1 - BPSK  
2 - DPSK

Dynamic figures to show the current network state (including packet loss-t, delay-t, and delay jitter-t)

## 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