RMCAT Video Quality Evaluation and Double Bottleneck Test Scenario

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Introduction

- Part 1: Proposes video quality test scenarios
  - Impact of congestion control on media streams is important in real-world deployments
  - It is proposed that RMCAT solutions are implemented in a state-of-the-art video coding and communication framework to provide proof-of-concept evidence
  - The purpose is to demonstrate that implementations of the congestion control solutions are feasible and that the video quality behavior under the defined test scenarios is as desired
- Part 2: "Double bottleneck" test scenario to provide insight into the rate allocation behavior of congestion controller
  - Asymmetric flow conditions

Video Quality Test Scenarios: Introduction

- Purpose is to verify or inspect the video quality of congestion control solutions
  - By defining "desired or expected" quality behaviors for each test
    - This means there should be no objectionable video quality problems
  - Subjective quality evaluation by expert viewer panel
    - "Expert viewer " means that video quality is understood as well as the various test scenarios
  - Result is "pass or fail"
    - Meaning that undesired video quality behaviors result in fail outcome
      - Quality problems (if any) should be carefully documented
    - Intention is not to compare congestion control methods against each other
    - Result is used in addition to network traffic evaluation results
- Video conferencing/telephony test sequences can be provided

Video Quality Test Scenarios

- ## Scenario A
  - Single bottleneck link and a single media flow
  - Purpose is to evaluate video quality under congestion control startup and varying bottleneck bandwidth behaviors

- ## Scenario B
  - Single bottleneck link and two media flows with different start times
  - Purpose is to evaluate video quality under the congestion control behavior when a second competing flow joins and leaves the bottleneck link

- ## Scenario C
  - Single bottleneck link with background traffic
  - Purpose is to evaluate video quality under congestion control behavior in the presence of bursty TCP flows

Part 2: Double Bottleneck Test Scenario

- One media flow encounters two bottleneck links (two queues) that are each shared with a second but different flow

- The purpose is to evaluate the congestion control's rate distribution among the flows under these asymmetric conditions
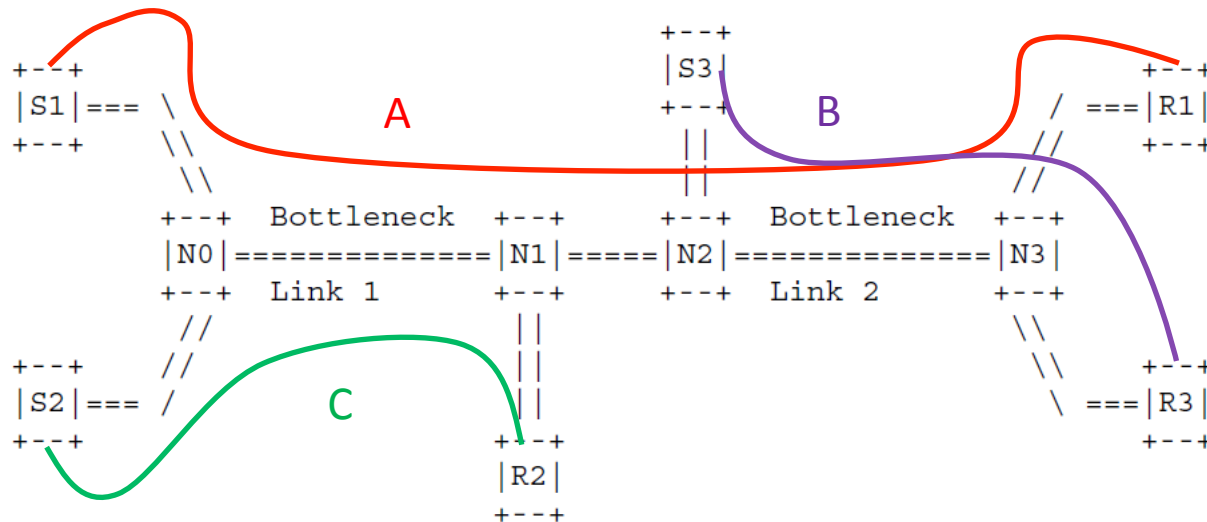
Summary

- Proposed to perform video quality evaluation in addition to network traffic evaluations
- Proposed to add "double bottleneck" test scenario to network traffic evaluation

Thank you!

Questions?