

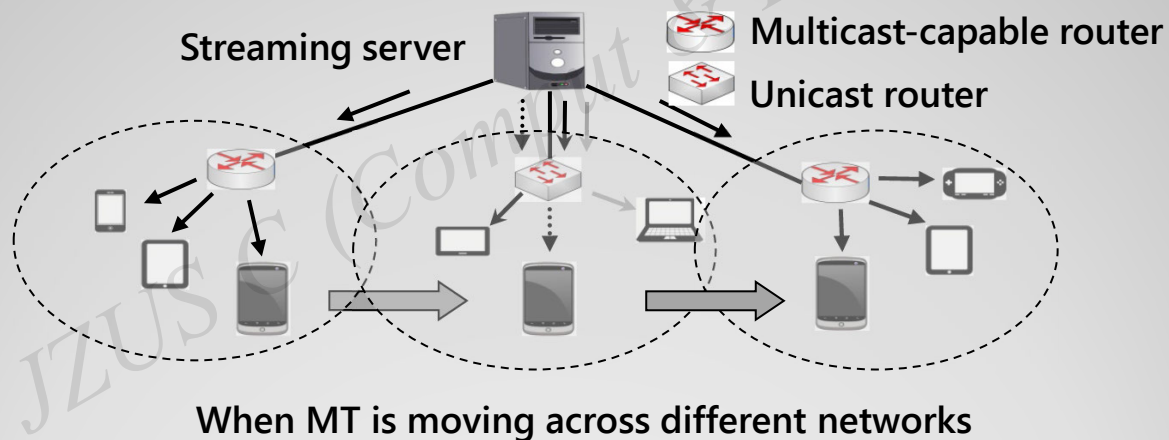
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Seamless handover between unicast and multicast multimedia streams

Key words: Experimental approach, Multimedia session continuity, Seamless handover, Unicast/multicast switching, Multimedia streaming

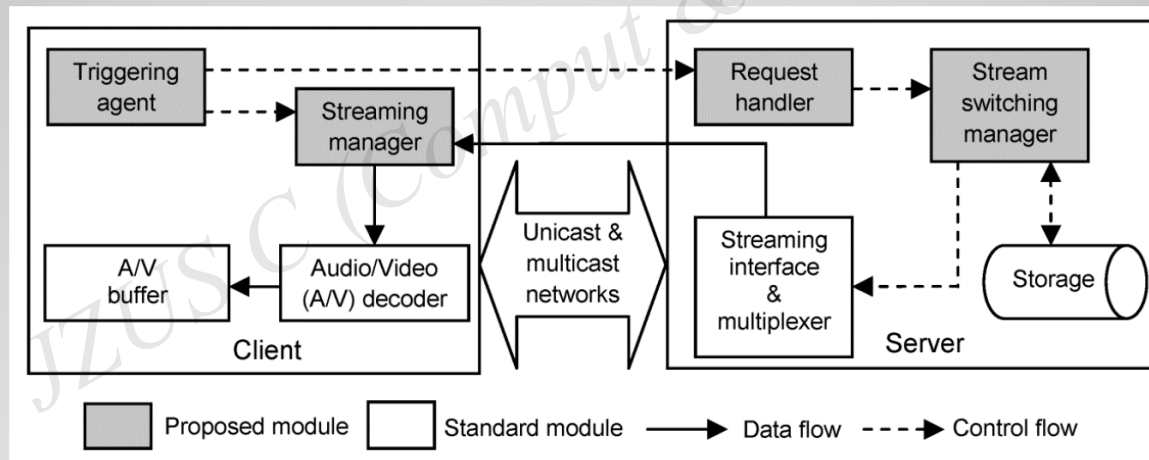
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- Multimedia services may suffer from disruption when a user moves across unicast and multicast networks.
- Existing schemes adopt simulation-based handover to preserve the ongoing multimedia session.
- Realistic effects such as audio and video buffer behaviors cannot be captured in such an approach.

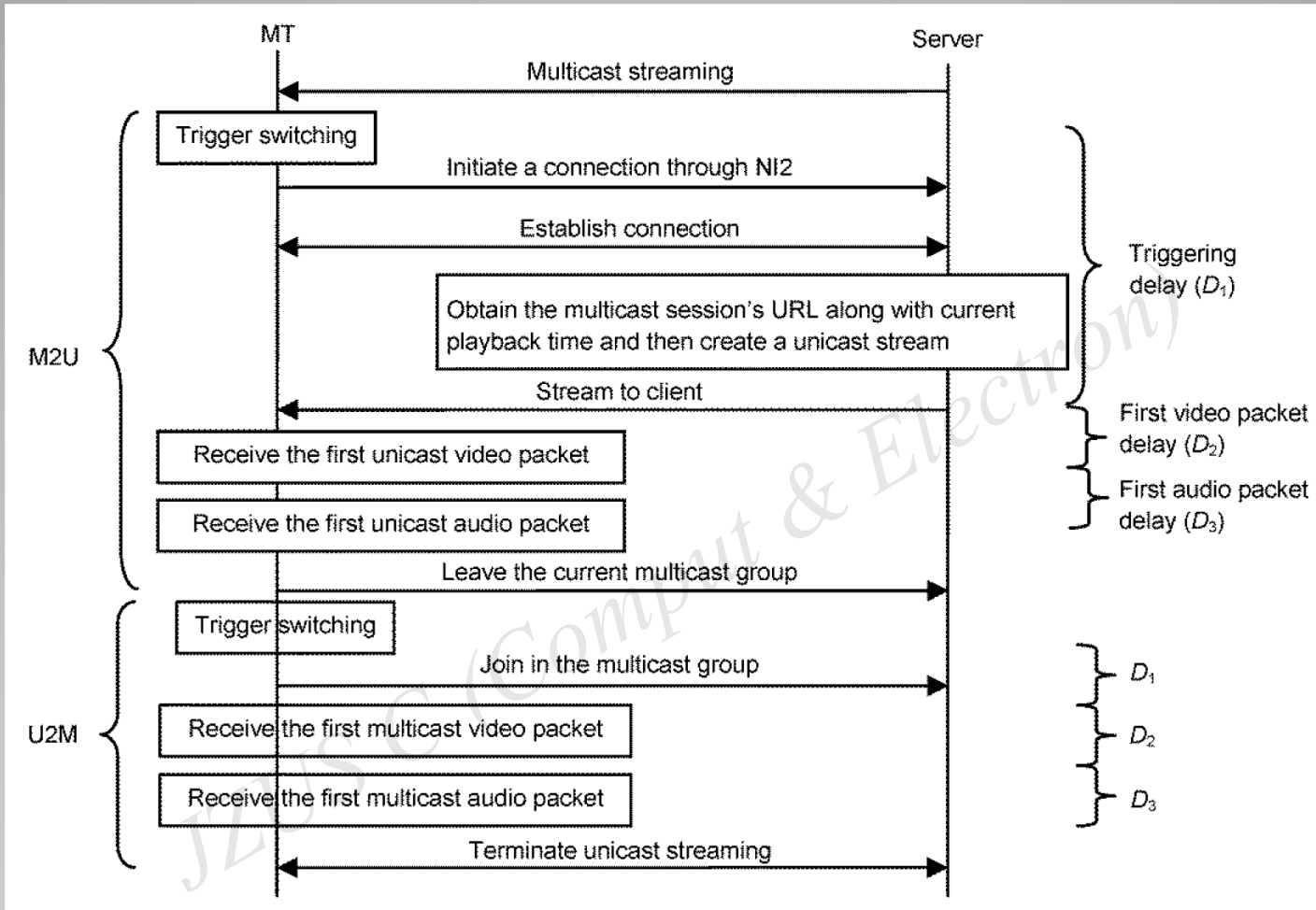


Motivation

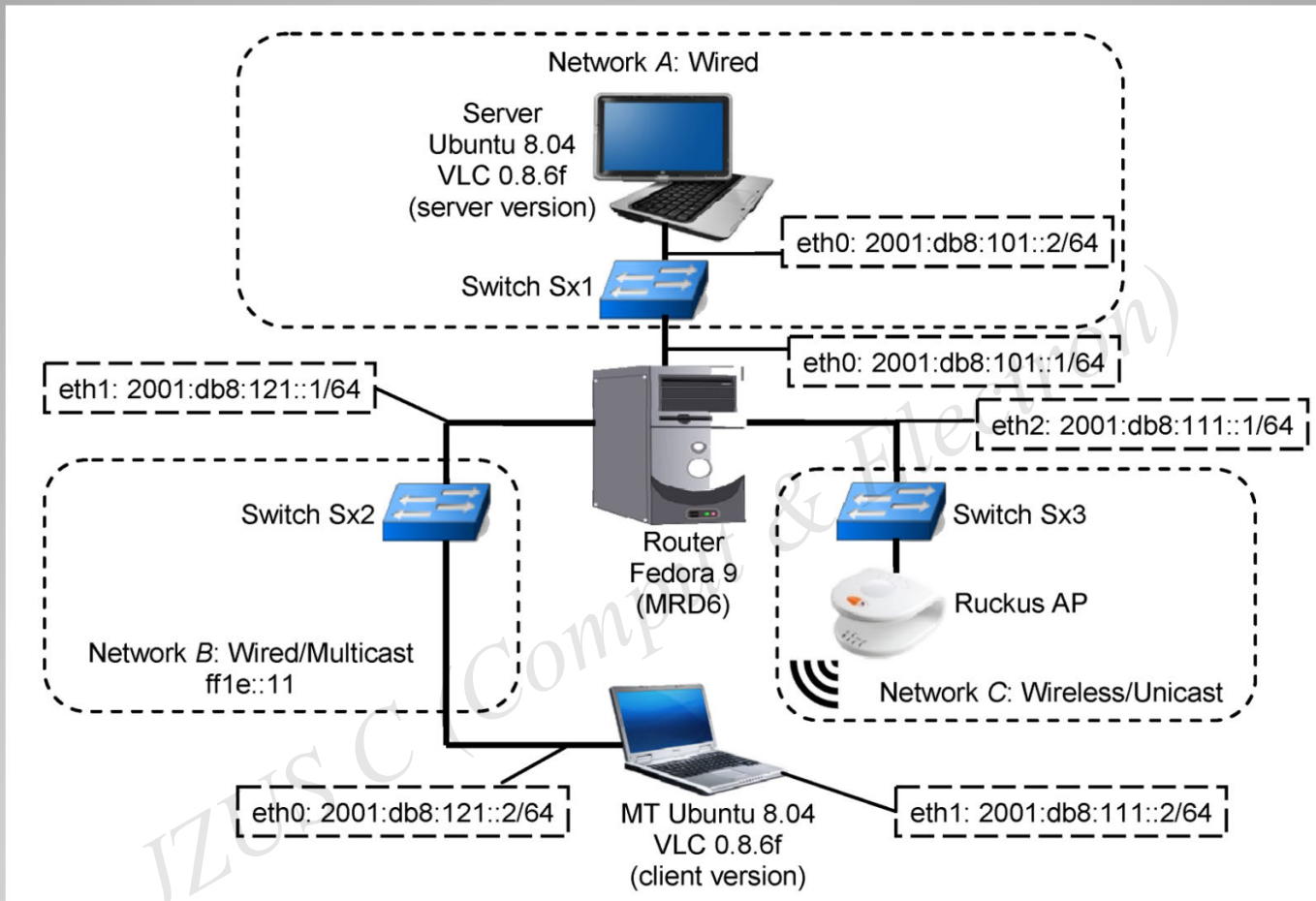
- Triggering agent: initiate a handover.
- Streaming manager: forward the A/V packets of new stream to the A/V decoder.
- Request handler: forward the IP address of any incoming client request together with the streaming URL to streaming switching manager.
- Streaming switching manager: creates an alternative streaming of the same URL with the same playback time.



Application sayer seamless switching (ALSS)



ALSS interaction



Testbed setup

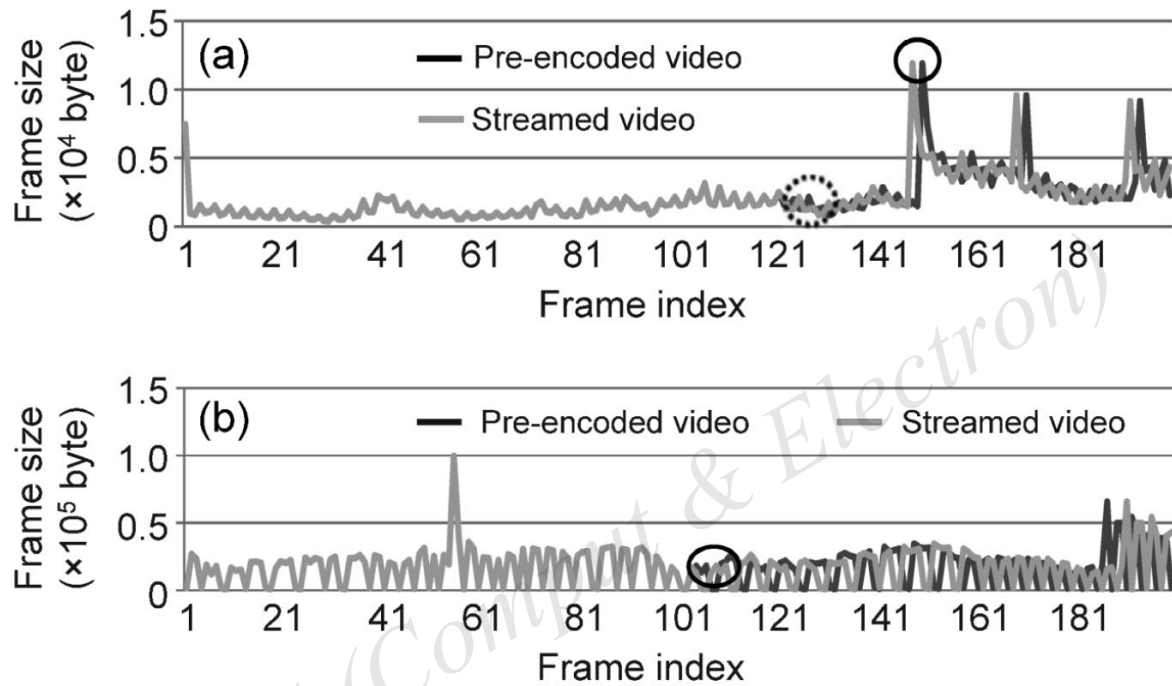


Fig. 15 Comparison of frame size between pre-encoded and streamed videos: (a) video I; (b) video III

Major results

- Experimental results showed that the overlapping periods for M2U and U2M handover took a minimum of 56 and 4 ms, respectively.
- The frame-by-frame quality of the streamed video was categorized at least as good based on ITU-T recommendations.
- The estimated mean opinion score (MOS) confirmed the video playback smoothness.

Conclusions