DISTRIBUTED VIDEO STREAMING USING COMPLETE COMPLEMENTARY SEQUENCES

Author(s): Chadi Khirallah (Lancaster University, United Kingdom)
Vladimir Stankovic (Lancaster University, United Kingdom)
Lina Stankovic (Fagoonee) (Lancaster University, United Kingdom)
Yang Yang (Texas A&M University, United States)
Zixiang Xiong (Texas A&M University, United States)

Abstract: In many distributed video streaming applications multiple terminals stream correlated video data to a central station to be processed. The fact that those terminals may be placed within a short range of each other in a time-varying environment, results in a high level of interference, multipath fading and noise effects. One classical solution to reduce those effects is to employ the well-known spread spectrum technique; however, this leads to a substantial increase in the required bandwidth and usually makes the system not acceptable for real-time wireless video communications. In this paper we provide a novel spreading scheme that reduces the required bandwidth by exploiting correlation among different terminal observations of a video source without performance penalty. Results obtained show reduction in a terminal transmission rate of approximately 1 Mbit/sec per terminal for the same reconstructed video quality.