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Sommario/riassunto	Wireless networks such as WiFi suffer communication performance issues in addition to those seen on wired networks due to the characteristics of the radio communication channel used by their Physical Layers (PHY). Understanding these issues is a complex but necessary task given the importance of wireless networks for the transfer of wide ranging packet steams including video as well as traditional data. Simulators are not accurate enough to allow all the intricacies of such communication to be accurately understood, especially when complex interactions between the protocols of different layers occurs. The paper suggests cross layer measurement as a solution to the problem of understanding and analysis of such complex communication issues and proposes a framework in which appropriate performance measurements can be made from a WiFi network supporting a video streaming application. The framework has been used to collect these measurements at the PHY, MAC, Transport and Application layers. Analysis of the collected measurements has allowed the effects of noise interference at the PHY to be related to the perceived performance at the Application Layer for a video streaming application. This has allowed the effect of the SNR on the download time of a video sequence to be studied.