

Soranat Jenthnomma 2010: End-to-End QoS Guarantee on Heterogeneous Wireless Network: Bluetooth and WLAN. Master of Engineering (Computer Engineering), Major Field: Computer Engineering, Department of Computer Engineering. Thesis Advisor: Associate Professor Anan Phonphoem, Ph.D. 72 pages.

Wireless network is a well-accepted technology which has been widely deployed. Currently, two major wireless technologies are WLAN and Bluetooth. Implementing both technologies in the same coverage area is an irregular condition. The coexisting of both technologies creates many challenge issues such as inequality of bandwidth: Bluetooth bandwidth is much lower than WLAN and the different of MAC layers, made it cannot send the data directly.

In this thesis, The end-to-end QoS guarantee on heterogeneous wireless network: Bluetooth and WLAN has been proposed. In this method the bridge is the control center of network. It controls the media access of all stations, both WLAN stations and Bluetooth's stations. Focusing on the REAL TIME traffic. In the Bluetooth side, I use the adaptive tuning of park and active time method by the feedback of the REAL TIME station's queue length value which apply this park and active ratio method to the NON-REAL TIME station.

After the implementing this proposed heterogeneous wireless network on the real testbed, by sending the REAL TIME and NON-REAL TIME traffics from the WLAN station to the Bluetooth stations. The empirical result shows that, for the REAL TIME station, the bandwidth has increase better than the standard protocol and the average of inter-packet time and the percentage of packet drop have decrease.

---

Student's signature

---

Thesis Advisor's signature